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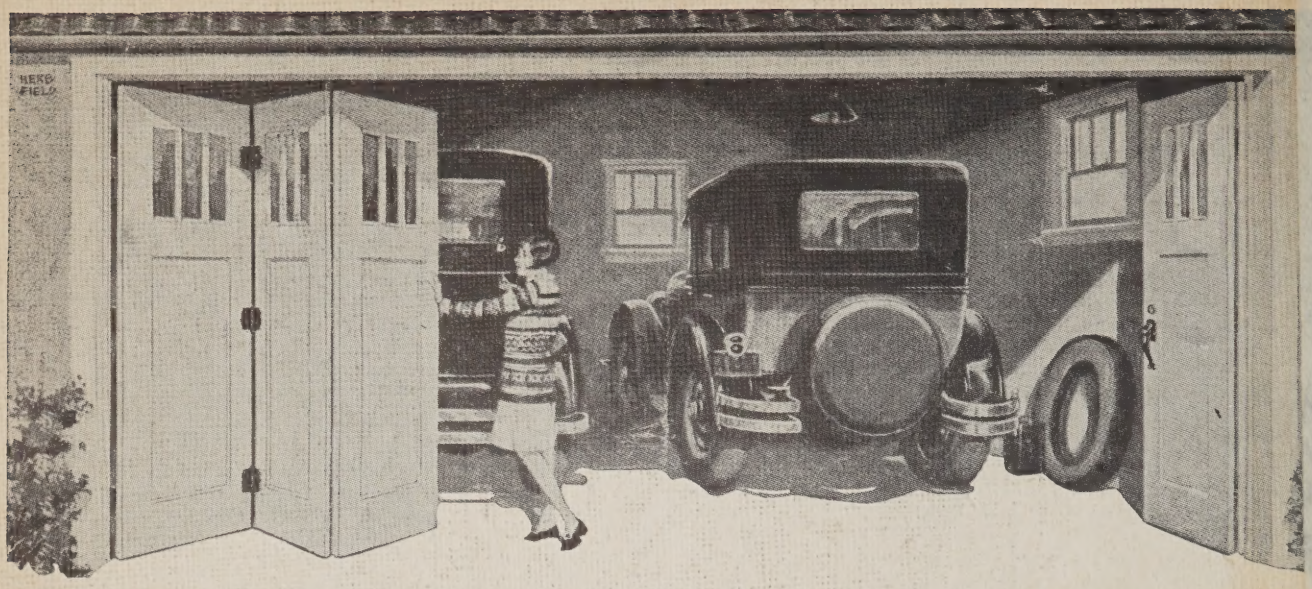
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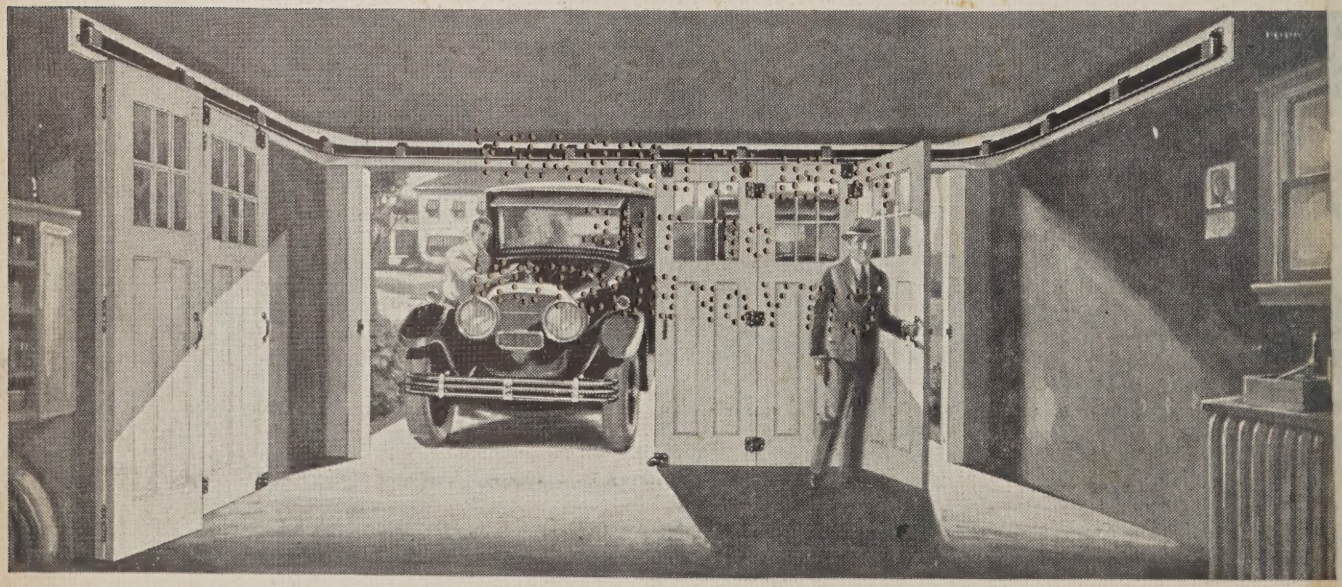
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Index to Advertising Announcements

Acme Brick Company 10
Adam Electric Company, Frank 122
Alberene Stone Company 32
Aluminum Co. of America 86
American Blower Company 139
American Chain Company, Inc 136
American Enameled Brick & Tile Co. 12
American Face Brick Association .. 26
American Institute of Steel Construction, Inc 61
American Laundry Machinery Co ... 175
American Radiator Company 9
American Rolling Mill Company, The 199
American Seating Company 81
American Sheet and Tin Plate Co ... 106
American Stove Company 126
American Walnut Mfrs. Ass'n 74
Appalachian Marble Company 43
A. P. W. Paper Co 211
Armstrong Cork and Insulation Company 108, 151
Armstrong Cork Co 17
Art Metal Construction Company 163
Associated Business Papers, Inc., The 104
Athey Company 68
Atlantic Insulated Wire & Cable Co. 159
Automatic Electric Company 161

Bakelite Corporation 171
Barrett Company, The 103
Batchelder-Wilson Company 19
Bates Expanded Steel Truss Co 165
Beardslee Chandelier Mfg. Co 82
Beaver Products Co., Inc 25
Bird and Son, Inc 84
Bonded Floors Company 75
Brasco Manufacturing Co 84

Cabot, Inc., Samuel 86
Carey Company, The Philip 157
Carnegie Steel Company 170
Carney Company, The 155
Carter-Bloxonend Flooring Company 27
Celotex Company, The 147
Cement-Gun Company, Inc 188
Cement Lined Pipe Co 200
Chamberlin Metal Weather Strip Co. 8
Chemical Toilet Corporation 202
Chicago Pump Co 134
Chromium Corp. of America 173
Circle A Products Corporation 58
Clay Products Association 26
Clinton Metallic Paint Co 28
Clow & Sons, James B 142, 143
Cohoes Rolling Mill Company 198
Colts Patent Fire Arms Mfg. Co 122
Columbia Mills, Inc 65
Common Brick Mfrs. Ass'n 7
Concealed Bed Corporation 80
Concrete Engineering Co., The 172
Concrete Reinforcing Steel Institute 168
Concrete Surface Corporation 144
Coppes Bros. & Zook 129
Corbin, P. & F 53
Craftex Company 85
Crittall Casement Window Company 116
Curtis Companies 98
Cutler Mail Chute Co 86

Dahlstrom Metallic Door Co 120
Davey Tree Expert Company 181
Davis Extruded Sash Company 119
De Long Furniture Co 83
Detroit Steel Products Company 118
Domestic Stoker Company 196
Douglas Co., The John 209
Dovetail Anchor Slot Co., The 167
Dunham Company, C. A 193
Du Pont de Nemours & Company, Inc., E. I 121
Duriron Co., The 200

Eagle-Picher Lead Company, The .. 90
Eastern Clay Products Association .. 26
Egyptian Lacquer Mfg. Company ... 94
Eljer Company 216
Emack Co., The John D 22
Excelso Specialty Works 176

Federal Cement Tile Company 102
Finzer Bros. Clay Co., The 28
Flax-Li-Num Insulating Co 180
Flexlume Corporation 176
Frink Co., Inc., The 113
Fulton Sylphon Company, The 149

General Chemical Company 138
General Electric Company 23, 132
General Fireproofing Company 29
Georgia Marble Company, The 18
Gillis & Geoghegan 134
Glidden Company, The 92
Globe Ventilator Company 190
Grand Rapids Store Equipment Corp. 178
Grauer & Co., Albert 107
Guth Company, Edwin F 112

Hamlin, Irving 56
Hanley Company, Inc Third Cover
Harrington Company, Joseph 190
Hauserman Co., The E. F 57
Heggie Simplex Boiler Corporation .. 13
Heinz Roofing Tile Co., The 20
Hess Warming & Ventilating Co 184
Higgin Mfg. Co 106
Higgins & Co., Chas. M 110
Hocking Valley Products Co 28
Holmes Disappearing Bed Company. 80
Holtzer-Cabot Electric Company, The 130
Hope & Sons, Henry 122
Horn Company, A. C 179

Illinois Engineering Company 215
Imperial Brass Mfg. Co., The 196
Improved Office Partition Company .. 70
Indiana Limestone Quarrymen's Association 46
International Cement Corporation .. 42
International Nickel Co 177
Iroquois Elec. Refrigeration Co., The 56

Jacobson Mantel & Ornament Co .. 82
Jacobson and Company 79
Jenkins Bros 205
Johns-Manville Corp 105
Johnson Co., S. T 189

Kalman Steel Company 164
Kawneer Co., The 48
Kensington Mfg. Company 73
Kerner Incinerator Co., The 123
Kewanee Boiler Company 4
Kewanee Private Utilities Co 134
Kny-Scheerer Corporation of America 46
Kosmos Portland Cement Co 40
Kraftile Company 111

Long-Bell Lumber Co., The 98
Louisville Cement Co 31
Ludowici-Celadon Company, The 47
Lupton's Sons Co., David 117

Macbeth-Evans Glass Co 114
Maddock's Sons Co., Thomas 208
Mason Fibre Company 33
May Oil Burner Corporation 187
McCray Refrigerator Sales Corp 130
McKinney Mfg. Company 51
Metalace Corporation, The 87
Milwaukee Corrugating Co 6
Milwaukee Valve Company 202
Mississippi Wire Glass Co 44
Morton Manufacturing Co 101
Moulding Brick Co., Thos 16
Mount & Robertson, Inc 56
Mueller Co 207
Murphy Varnish Company 95

Nash Engineering Co ... 153, Fourth Cover
National Building Units Corp 110
National Fire Proofing Company 1
National Lead Company 97
National Mortar & Supply Co 36
National Paper Products Company .. 130
National Radiator Company 186
National Terra Cotta Society 100
National Tube Company 201
Nelson Corp., The H. W 184, 188
Never Split Seat Company 204
North Western Expanded Metal Co .. 5
Norton Company 45

Otis Elevator Company 135

Pecora Paint Company 37
Pennsylvania-Dixie Cement Corp 26
Pfaudler Co., The 174
Portland Cement Association 38
Pratt & Lambert, Inc 88

Ramp Buildings Corporation 11
Raymond Concrete Pile Company .. 3
Reeves Company, Robert C 82
Richards Wilcox Mfg. Co ... Second Cover
Ritter Lumber Co., W. M 96
Robbins Flooring Company 110
Rockford Steel Furniture Company. 78
Roddis Lumber and Veneer Company 96
Rome Brass Radiator Corporation .. 185
Ruberoid Co., The 106
R. U. V. Co., Inc., The 141

Safety Car Heating and Lighting Company, The 34, 35
Sargent & Company 52
Schumacher & Co., F 77
Sedgwick Machine Works 158
Sheldon Slate Company, F. C 24
Sloane Mfg. Co., W. & J 109
Smith & Egge Mfg. Co., The 174
Sonneborn Sons, Inc., L 213
Speakman Company 206
Spencer Heater Company 194
Standard Conveyor Co 162
Standard Gas Equipment Corp 128
Stanley Works, The 54
Stone & Webster, Inc 39
Sullivan Granite Company 46
Sykes Metal Lath Company, The .. 169

Thatcher Company, The 160
Titusville Iron Works Company, The 195
Todhunter, Arthur 84
Trenton Potteries Company, The 203
Truscon Steel Co 2
Turner Construction Company 66

United States Gutta Percha Paint Co 93
United States Gypsum Co 30, 49
United States Quarry Tile Co 89
United States Radiator Corp 192
Utica Heater Company 183

Valentine & Company 91
Van Range Co., John 124, 125
Van Zile Ventilating Co 190
Vitaglass Corporation 115
Vitrolite Company, The 98
Vonnegut Hardware Co 55
Vortex Mfg. Company 50

Walworth Company 197
Warren Webster & Co 41
Wasmuth-Endicott Company 127
Waterproofing Co., The 137
West Coast Lumber Bureau 99
Western Pine Mfgrs. Ass'n 96
Westinghouse Elec. & Mfg. Co .. 131, 133
Wheeling Steel Corporation 166
Wickwire Spencer Steel Co 184
Williams Oil-O-Matic Heating Corp. 191
Wilmot Castle Co 21

Young Pump Company 182

Zapon Company, The 63
Zenitherm Company 76
Zouri Drawn Metals 14, 15

THE ARCHITECTURAL FORUM

INDEX TO VOLUME XLVI — JANUARY TO JUNE INCLUSIVE, 1927

Index to Illustrations According to Subject

BUILDINGS (Complete)

Apartments Dawson Building (Shop and Apartment Building,) New York, ex. (detail drawing).....337-340
Automobile Assembly Plants Dearborn Engineering Laboratory, Dearborn, Mich., ex. in.....212, 213
Ford Motor Car Company, St. Paul, ex. in. 210, 211
Automobile Sales and Service Buildings Buick Motor Company Garage and Sales Bldg., Denver, ex. pl.....**44**
Chrysler Sales Room, Pasadena, ex.....**42**
Dodge Brothers' Sales Room, Detroit, ex. in. 311, **34**
Ford Motor Car Company, New York, ex...209
Ford Motor Company Show Room and Accessory Shop, Philadelphia, ex. pl.....**38**
Franklin Motor Car Co., Hollywood, Cal., ex. pl.....**58**
Gotfredson Truck Corporation Sales and Service Bldg., Los Angeles, ex. pl.....**46**
Lincoln Automobile Agency Building, Denver, ex.....**47**
Lincoln Sales and Service Building, Hollywood, Cal., ex.....**50**
Lord Motor Car Co. Sales Building, ex.....**57**
Nash Motor Car Co. Show Room, Havana, ex.**48**
Packard Sales and Service Building, Detroit, ex. in.....306, 310, 311, **35, 64**
Packard Sales Room, Washington, ex.....**39**
Pierce Arrow Sales and Service Building, ex.**61**
Pierce Arrow Sales and Service Building, Hollywood, Cal., ex.....**43**
Pierce Arrow Sales Building, Pasadena, ex.**37**
San Francisco, Cal., Automobile Sales Building, ex.....**52**
Star Motor Car Co. Sales Building and Garage, Hollywood, Cal., ex. in. pl.....307, **51**
Stockton, Cal., Combination Garage and Sales Room, ex.....234
Studebaker Show Rooms and Garage, Brooklyn, ex.....**59**
Studebaker Sales, Service and Garage Building, Miami, ex.....**56**
Studebaker Sales Building, Pasadena, ex.....**45**
Studebaker Sales and Service Building, San Diego, ex.....**63**
Stutz Sales and Service Building, Hollywood, Cal., ex.....**53**
Uppercu Cadillac Corporation Salon, New York, ex. in.....309, **60**
White Truck Company, Garage and Service Bldg., San Francisco, ex. pl.....**36**
Banks Moorestown Trust Co., Moorestown, N. J., ex. in. pl.....363, 364, **73-75**
Churches Thirteenth Church of Christ Scientist, Los Angeles, ex. in. pl.....**77-80**
Wilshire Boulevard Congregational Church, Los Angeles, ex. in. pl. (detail drawing) **84-88**
City and Town Halls Burlington, Iowa, ex....565
Charlotte, N. C., ex.....564
Dade County Court House and Miami City Hall, Miami, ex.....519, 520
Des Moines, Iowa, Municipal Court and Public Safety Bldg., ex.....564
Larchmont, N. Y., Fire House and Town Hall, ex. pl.....**120**
Lebanon, N. H., ex. pl.....568, **113**
Littleton, Colo., ex.....561, **117**
Milburn, N. J., Fire Station and Town Hall, ex. 561
Milford, Conn., ex. pl.....**115**
Plainfield, N. J., Municipal Building.....562
Plattsburg, N. Y., City Hall and Memorial Monument, ex. pl.....566, **119**
Robbins Memorial Town Hall, Arlington, Mass., ex. in.....563
Springfield, Mass., Municipal Buildings, ex. 567
Swedesboro, N. J., Town Hall and Fire Station, ex.....**127**
Teaneck, N. J., Municipal Building, ex. pl. 565, **114**
White Plains, N. Y., Municipal Building, ex. pl.....562, **118**
Yuma, Ariz., ex. pl.....**116**
Court Houses Albany County Court House, Albany, N. Y., ex.....517
Catawba County Court House, Newton, N. C., ex. in. pl.....**106**
Clarke County Court House, Athens, Ga., ex. pl.....514
Dade County Court House and Miami City Hall, Miami, ex.....519, 520
Douglas County Court House, Superior, Wis., ex. 517
Essex County Court House, Newark, ex. pl.**109**
Fulton County Court House, Atlanta, ex. pl. 516
Hamilton County Court House, Cincinnati, ex. pl.....**107**
Hardin County Court House, Kenton, O., ex. in. pl.....**110**
Memphis, ex. pl.....**108**
Mesa County Court House, Grand Junction, Colo., ex. pl.....**112**
New York County Court House, New York, ex. pl.....**105**
Orleans Parish Court House, New Orleans, ex. pl.....515
Ouachita Parish Court House, Monroe, La., ex. pl.....**111**
Rowan County Court House, Salisbury, N. C., ex. 513
Exposition Building "Parthenon" Nashville, ex. pl.....433-436
Farm Buildings Barns, Estate of C. L. Hay, Newbury, N. H., ex.....**32**
Fire Alarm Stations Boston, ex. in. pl....609, 612
Richmond, ex. pl.....610
Stockton, Cal., ex. pl.....611
Fire Houses Arlington, Mass., ex. pl.....**123**
Asheville, N. C., ex. pl.....589
Beverly, Mass., ex. pl.....592
Birmingham, Ala., ex.....590
Cleveland, ex.....586, 589
Colorado Springs, ex. pl.....586, 588
Danvers, Mass., ex.....590
Greensboro, N. C., ex. in.....591
Larchmont, N. Y., ex. pl.....585, **128**
Larchmont, N. Y., ex. pl.....**120**
Mariemont, O., ex. pl.....**124**
Milburn, N. J., ex. pl.....**125**
New York, Vermilyea Ave., ex. pl.....**121**
Philadelphia, Byberry Fire House, ex. pl...**122**
Salem, Mass., ex. pl.....**126**
Swedesboro, N. J., ex.....**127**
Worcester, Mass., ex. pl.....587
Fraternal Buildings Elks' Building, Los Angeles, Cal., ex. in. pl.....**17-22**
Garages—Public Atlanta, Ramp Garage, ex. in. 237, 263
Baker Garage, Minneapolis, ex. in...235, 239, **33**
Biltmore Garage, Los Angeles, ex.....**62**
Bolling Jones Building, Atlanta, ex.....236
Bowdoin Square Garage, Boston, ex. in. pl. 259, 262, **49**
Clarke's Strand Garage, New Orleans, ex. 235
Cullen, F. C., Garage, Denver, ex. pl.....**41**
Detroit Garages, Inc., Detroit, ex. in. 214, 233, 235
Detroit, Mich., Accessories and Garage Building, ex.....237
Evening News Garage, Detroit, ex.....342
Grand Circus Garage, Detroit, ex.....236
Hollywood, Cal., Shop, Garage and Office Building, ex.....**54**
Hotel Statler Garage, Buffalo, ex. pl.....**40**
Ramp Garage Building—Ten Story, ex.....240
Pittsburgh Parking Garages, Inc., Pittsburgh, ex. in.....234, 240
Studebaker Show Rooms and Garage, Brooklyn, ex.....**59**
Washington Terminal Garage, Newark, ex. pl.**55**
Government Buildings Insular Capitol, Manila, ex. pl.....537, 538, **103**
Minnesota Capitol, St. Paul, ex. pl.....**101**
Missouri Capitol, Jefferson City, ex. pl...**98-100**
Nebraska Capitol, Lincoln, ex.....**102**
Porto Rican Capitol, San Juan, ex. pl.....**104**
Rhode Island Capitol, Providence, ex. pl.....**97**
West Virginia Capitol, Charleston, ex. in. Frontis, 507, 508
Hall of Records Essex County Hall of Records, Newark, ex.....509-512
Hotels Breakers, Palm Beach (detail drawings) ex. in. pl.....453-456, **89-96**
Shelton Hotel, New York, N. Y., ex..... 3
Houses Bartow, F. D., Woods Hole, Mass., ex. pl. 89, 90
Baum, Mrs. Fayette, Riverdale-on-Hudson, N. Y., ex. pl.....72
Bone, Hugh, Columbus, O., ex. pl.....81, 82
Bostwick, Homer, Columbus, O., ex. pl....83, 84
Burnham, Mrs. Grace M., Great Neck, N. Y., ex. pl.....399, 400
Cape Cod Cottage—First Prize Design in Cape Cod Cottage Competition, ex. pl.....76
Second Prize Design, ex. pl.....74
Third Prize Design, ex. pl.....75
Cargill, William W., Madison, Wis., ex. pl. 389, 390
Cleaves, James H., Winchester, Mass., ex. pl. 95, 96
Cuno, Charles H., Meriden, Conn., ex. pl. 397, 398
Douglas, Donald B., Winnetka, Ill., ex. pl....69
Draper, Eben S., Hopedale, Mass., ex. in. pl.**65-72**
Elizabeth, N. J., House Adapted from an Old Homestead, R. C. Hunter & Bro., Archts., ex. pl.....79
Emery, Miss Georgia H., Brookline, Mass., ex. pl.....71
Fritsche, William A., Columbus, O., ex. pl. 85, 86
Good, Thomas J., Pelham Manor, N. Y., (Office and House) ex. pl.....489, 490
Haemmel, F. W., Port Washington, N. Y., ex. pl.....385, 386
Hay, C. L., Newbury, N. H., ex. in. pl...**25-32**
Hewitt, Mrs. Lucy Work, Cornwall, N. Y., ex. in. pl.....45-48, **9-12**
Hohokus, N. J., Old House in Colonial Style, ex. pl.....77
Jaskow, Louis, New Rochelle, N. Y., ex. pl. 70
Kelleher, J. H., Pasadena, ex. pl.....67
Morgan, Sherley W., Princeton, N. J., ex. in. pl., (detail drawing).....381-384
Mowry, Dr. William A., Madison, Wis., ex. pl. 387, 388
Parrish, J. Scott, Richmond, ex. in.....106-112
Poor, J. Wharton, Flushing, N. Y., ex. in. pl. 93, 94
Rie, Paul A., Port Washington, N. Y., ex. pl. 66
Scarsdale, N. Y., ex. pl. George Fulton, Jr., Architect.....393, 394
Sinclair, Dr. D. B., Princeton, N. J., ex. in. pl.....87, 88
Southwick, C. T., Great Neck, N. Y., ex. in. pl.....**1-4**
Springfield, N. J., House Adapted from Old Cottage, ex. pl.....78
Topnick, John C., Pittsburgh, ex. pl.....68
Union, N. J., House Adapted from Old Cottage, ex. pl.....80
Voorhis, Peter A. H., Yonkers, N. Y., ex. in. pl.....391, 392
Westchester County, N. Y., George Fulton, Jr., Archt., ex. pl.....395, 396
Wheeler-Beecher House, Bethany, Conn. (1805) (measured drawings) ex. in. pl. 193-200, 503, 504
White, D. W., Douglas Manor, N. Y., ex. in. pl.....91, 92
Industrial Buildings American Type Founders Company, Elizabeth, N. J., Plant for Kelly Press Division, ex. in.....170-174
Office Buildings Boston, 24 Newbury St., Shop and Office Building, ex.....178, 179
Bush Terminal Building, New York, ex..... 6
New York Telephone Co. Building, West St., New York, ex..... 2
Tribune Tower, Chicago, ex..... 7
Police Headquarters Boston, ex. in. pl. (detail drawing).....539-544
Real Estate Office Canterbury Realty Corporation, Great Neck, N. Y., ex. pl.....487, 488
Fox Meadows, Hartsdale, N. Y., ex. in. pl. 495, 496
Good, Thomas J., Pelham Manor, N. Y., Office and House, ex. pl.....489, 490
Great Neck, N. Y., ex. pl.....483, 484
Homeland Company, Hastings, N. Y., ex. pl. 493, 494
Kenilworth, Great Neck, N. Y., ex. pl...485, 486
Larchmont, N. Y., ex. pl.....491, 492
Russell Gardens, Great Neck, N. Y., ex. pl. 481, 482
Recreation and Amusement Buildings Aragon Ballroom, Chicago, ex. in. pl.....**13-16**
Schools Choate School, Mellon Building, ex. in. pl.....129-132, **23, 24**
Stores Boston, Chestnut St., ex.....182, 183
Dawson Building, Shop and Apartment Bldg., New York, ex. (detail drawing).....337-340
Todhunter's, New York, ex.....180, 181
Telephone Exchange New York Telephone Co. Building, West St., New York, ex..... 2
Theaters Ziegfeld Theater, New York, ex. in. pl. 414-416, **81-83**

KEY TO PAGES AND PLATES

	Pages	Plates	Foreign Plates
January	1-104	**1-16**	*49-56*
February	105-200	**17-32**	*57-64*
March	201-312	**33-64**	
April	313-408	**65-80**	*65-72*
May	409-504	**81-96**	*73-80*
June	505-616	**97-128**	

*Illustrated; ex., exterior; in., interior; pl., plan.

FORUM STUDIES OF EUROPEAN PRECEDENTS

Courtyard Ca D'Oro, Venice....73
Chateau Clermont at Tonnerre, Second Court....63
Municipal Palace, Viterbo....65, 66
Old Monastery, Outside Porta Romana, Licna....69
Piccolomini Palace....72
Rimini....70
St. Peter's....71
Spoleto....67
Doors and Doorways, Digne, Entrance with Double Doors....57
Doorway with Pilasters and Transom....58
Doorway with Pilasters forming part of decoration of door....59
Double Doors with Paneling Reminiscent of Louis XV Period....60
Unusual Decorative Treatment of Transom..61
Narrow Pilasters Part of Door Itself....62
Simple Doorway Treatment Characteristic of Digne....63
Two-Paneled Door with Narrow Pilasters....64
Palace of Versailles From the Gardens....49
End Facade Facing the Orangery....50
Detail—One of the Pavilions....51
Detail—Garden Facade....52
Approach to the Terrace, Garden Facade....53
Detail—Vase and Stairway Parapet....54
Garden Stairway Leading up from Orangery 55
Detail—Vases Along the Path to the Lagoon 56
Inns of Court, London, Old Georgian Buildings in the Yard....74
English Garden Entrance....75
Montacute House, Home of Lord Curzon, Begun 1281, Completed 1302....76
Portion of Garden Facade, Brympton D'Evercy, Built about 1250....77
Clock Tower and Belfry in Forecourt, Brympton D'Evercy, Built about 1250....78
Classic Bridge, Wilton House, Seat of the Earl of Pembroke, Sir William Chambers, Architect....79
Exedra, Wilton House, Seat of the Earl of Pembroke, Sir William Chambers, Architect....80

SKETCHES

Azay-le-Rideau....316
Chenonceaux from the River....Frontis, April
In the Courtyard, Blois....315
Langeais from the Highroad....317
Towers of Amboise....314

INTERIORS

Auditoriums Robbins Memorial Town Hall, Arlington, Mass....563
Thirteenth Church of Christ Scientist, Los Angeles....80
Wilshire Boulevard Congregational Church, Los Angeles....86
Ballroom Aragon Ballroom, Chicago....14
Banking Room Moorestown Trust Co., Moorestown, N. J....364, 75, 76
Chapel Wilshire Boulevard Congregational Church, Los Angeles....88
Court Rooms Catawba County Court House, Newton, N. C....106
Hardin County Court House, Kenton, O....110
Dining Rooms Draper, Eben S., Hopedale, Mass....72
Elks' Building, Los Angeles....21
Hewitt, Mrs. Lucy Work, Cornwall, N. Y....47, 48
Parrish, J. Scott, Richmond....108
Drawing Rooms Draper, Eben S., Hopedale, Mass....71, 72
Hay, C. L., Newbury, N. H. (detail drawings)....29-31
Parrish, J. Scott, Richmond....109
Southwick, C. T., Great Neck, N. Y....4
Voorhis, Peter A. H., Yonkers, N. Y....392
Fire Alarm Stations Fire Alarm Headquarters, Boston....609
Fire House Apparatus Room, Fire House, Greensboro, N. C....591
Foyers Elks Building, Los Angeles....20
Thirteenth Church of Christ Scientist, Los Angeles....79, 80
Garages Fort Shelby Garage, Detroit....214
Packard Garage, Philadelphia....260, 261
Halls and Corridors Elks' Building, Memorial Hall, Los Angeles....22
Hay, C. L., Newbury, N. H. (detail drawings)....26-28
Hewitt, Mrs. Lucy Work, Cornwall, N. Y....46, 47
Morgan, Sherley W., Princeton, N. J....382
Southwick, C. T., Great Neck, N. Y....4
Libraries Draper, Eben S., Hopedale, Mass....71
Mellon Building, Choate School....131
Morgan, Sherley W., Princeton, N. J....382
Lobbies Aragon Ballroom, Chicago....15
Breakers, Palm Beach....92
Insular Capitol Building, Manila (Senate Lobby)....538
Police Department Headquarters, Boston...541
Lodge Rooms Elks' Building, Los Angeles....19
Lounges Aragon Ballroom, Chicago....16
Breakers, Palm Beach....93, 96
Elks' Building, Los Angeles....21, 22
Ziegfeld Theater, New York....415
Show Rooms Automobile Sales Room....308
Cadillac Corporation, New York....309
Dodge Brothers Motor Car Co., Detroit....311
Ford Motor Car Company Assembly Plant, St. Paul....211
Marmon Motor Car Co., Los Angeles....310
Packard Motor Car Co., Chicago....308
Packard Motor Car Co., Detroit....306, 310, 311
Packard Motor Car Co., Philadelphia....309
Star Motor Car Co., Hollywood, Cal....307
Thompson Motor Car Co., Denver....312

ARCHITECTURAL DETAILS

Colonnade Missouri Capitol, Jefferson City....100
Doorways, Exterior Dawson Building, New York, (detail drawing)....339, 340
First National Bank, Davenport, Ia....28
First National Bank, Neenah, Wis....26
First National Bank, Wisconsin Rapids, Wis. (detail drawing)....6
Hardware Mutual Insurance Building, Stevens Point, Wis. (detail drawing)...27, 8
House, Eben S. Draper, Hopedale, Mass....68
House, Mrs. Lucy Work Hewitt, Cornwall, N. Y....11
House, Sherley W. Morgan, Princeton, N. J. (detail drawing)....383, 384
House, J. Scott Parrish, Richmond....110, 111
National Manufacturers' Bank, Neenah, Wis. (detail drawing)....5
Northern States Life Insurance Co. Building, Hammond, Ind. (detail drawing)....27, 7
Police Department Headquarters, Boston, (detail drawings)....543
State Bank and Trust Co., Evanston, Ill....26
Wheeler-Beecher House, Bethany, Conn. (1805) (measured drawing)....503, 504
Doorways, Interior Breakers, Palm Beach, (detail drawing)....95
House, C. L. Hay, Newbury, N. H. (measured drawings)....27-29
Entrance Courts Ferry, D. M., Jr., Grosse Pointe, Mich. (Forecourt Entrance)....475
Kinnicut, G. Herman, Far Hills, N. J....473
Sabin, Charles H., Southampton, N. Y....476
Stephens, Mrs. Henry, Grosse Pointe, Mich. (Forecourt Entrance)....474
Stone, Charles, Locust Valley, N. Y....477
Facades Breakers, Palm Beach (detail drawing)....90
Essex County Hall of Records, Newark (detail drawings)....510, 511
Wilshire Boulevard Congregational Church, Los Angeles (detail drawing)....85
Fireplaces Draper, Eben S., Hopedale, Mass...71
Hay, C. L., Newbury, N. H., (measured drawing)....30
Hewitt, Mrs. Lucy Work, Cornwall, N. Y....12
McClellan, General, Topsham, Maine, (1793) (measured drawing)....499, 500
Mellon Building, Choate School....132
Parrish, J. Scott, Richmond....108, 109
Putman, Stephen, Danvers, Mass. (1812) (measured drawing)....497, 498
Valentine House, Bronxville, N. Y. (1790) (measured drawings)....501, 502
Wheeler-Beecher House, Bethany, Conn., Built 1805 (measured drawings)....197-200
Garden Pools and Accessories House, J. Scott Parrish, Richmond....112
Gateways, House, J. Scott Parrish, Richmond, ...106
Temple of Khons, Karnak....25
Interiors—French Dining Room, Hotel de Chaulnes, Paris (measured drawings) 401-408
Salon, Hotel de Tesse, Paris (measured drawings)....97-104
Loggia Breakers, Palm Beach....91, 94
Metal Work, Balconies and Lunettes, House, J. Scott Parish, Richmond....110, 111
Bronze Dedication Tablet, Police Department Headquarters, Boston....543
Bronze Flagpole Base, Police Department Headquarters, Boston....542
Mural Decoration Ceiling and Walls, Ziegfeld Theater, New York....416, 82, 83
Frieze, The Breakers, Palm Beach (detail drawing)....95
Patio The Breakers, Palm Beach....454, 455
Porches The Breakers, Palm Beach....454
Wheeler-Beecher House, Bethany, Conn. (1805) (measured drawing)....503, 504
Porticos City Hall, Plattsburg, N. Y....119
House, Mrs. Lucy Work Hewitt, Cornwall, N. Y....10
Moorestown Trust Co., Moorestown, N. J....74
Municipal Building, Teaneck, N. J....114
Thirteenth Church of Christ Scientist, Los Angeles....78
Town Hall, Milford, Conn....115
Pulpit Wilshire Boulevard Congregational Church, Los Angeles....87
Ramps Bowdoin Square Garage, Boston..259, 262
Detroit Garages, Inc., Detroit....235
Pittsburgh Parking Garages, Inc., Pittsburgh 234
Sculpture and Carving Doorway, Hardware Mutual Insurance Co. Bldg., Stevens Point, Wis. 27
Pediment, New York County Court House 319, 320
Symbolic War Memorial....5
"The Three Wise Men" Sculptured for a Chapel at Berkeley, Cal....4
Shop Fronts Boston, 24 Newbury St....178, 179
Boston, 90 Berkeley St....189
Boston, Charles St. (Two Story)....184, 185
Boston, Chestnut St....182, 183
Boston, River St....177
Boston, Tremont and Avery Sts....188
Boston Music Co., (Large and Small Panes) 192
Dawson Building (detail drawing)....339-340
Hayden Co.—Show Windows on Two Streets 191
New York, 131 E. 57th St. (Two Story)....191
New York, 3 East 47th St....190
New York, 16 East 60th St....190
New York, 126 East 57th St....189
New York, 821 Madison Ave....186, 187
Todhunter, 119 East 57th St., New York (Recessed Shop Windows on Two Levels) 180, 181
Stairways Grand Stairway, Elks' Building, Los Angeles 18
Aragon Ballroom, Chicago....16
Windows Wheeler-Beecher House, Bethany, Conn. (1805) (measured drawing)....195, 196

Index to Articles According to Subject

A. I. A. & Chapters Sixtieth Annual Convention....June
Architecture *Architecture and Decoration of Automobile Show Rooms, William F. Wharton....305
*Architectural Heritage of New Orleans, The, William P. Spratling....410
*New Architecture and the Master Sculptor, The, Leo Friedlander....1
*Shop Windows and Shop Fronts, Leigh French, Jr....177
*Small Country House in the Colonial Style, The, R. C. Hunter....77
Some Observations on Commercial Architecture, Harvey Wiley Corbett....176
Associations Arts Council, Organization of, New York, N. Y....May 71
Automotive Buildings *Analysis of Garage Design, An, Albert O. Larson....215
*Architecture and Decoration of Automobile Show Rooms, William F. Wharton....305
*City Parking Garage, The, Robert O. Derrick 233
Heating and Ventilating of Garages, Walter Tusch....257
*Layout of Automotive Buildings, The, Harold F. Blanchard....281
*Mechanical Equipment of the Garage, The, Ralph Harrington Doane....259
*Sales and Service Buildings, Garages and Assembly Plants, Albert Kahn....209
*Structural Fire Prevention for Large Garages, C. Stanley Taylor....341
Building Costs Building Situation....478
Building Economics Building Situation....478
Forecast of 1927 Building Activity, C. Stanley Taylor....149
Buildings—Description of *Breakers, The, Palm Beach....453
*Dawson Building....337
*Essex County Hall of Records, Newark....509
*Fire Alarm Headquarters, Boston....609
*Fire House and Auditorium....585
*Mellon Building, The, Choate School....129
*"Parthenon" The, Nashville....433
*Plant for Kelly Press Division, American Type Founders Co., Walter H. Lewis....169
*Ziegfeld Theater, The, New York....415
City Planning *Problem of Traffic Congestion, and a Solution, The, Harvey Wiley Corbett 202
Competitions Announcement of competition for College Buildings in Australia....April 71
*Awards in Cape Cod Cottage Competition....75
*Awards in Common Brick House Competition 65
Competition in Texas—various types of paintings....June 71
Competition for Steedman Memorial Fellowship in Architecture....Jan. 63
Conventions A. I. A. Sixtieth Annual....June
Design *Analysis of Garage Design, An, Albert O. Larson....215
*Architectural Heritage of New Orleans, The, William P. Spratling....410
*Automobile Show Rooms, Architecture and Decoration of, William F. Wharton....305

*Capitol of the Philippines, The, Charles G. Loring 537
*City and Town Halls, Charles G. Loring....561
*City Parking Garage, The, Robert O. Derrick 233
*Designing Capitol Buildings, Joseph H. Freedlander 505
*Designing and Planning of Court Houses, A. Ten Eyck Brown.....513
*Dining Room, Hotel de Chaulnes, Paris, C. Hamilton Preston.....401
*Doorways, Some Recent Monumental, William J. Smith.....25
*Formal Entrance Courts, Ruth Dean.....473
*Fire Alarm Headquarters, Boston.....609
*House of Mrs. Lucy Work Hewitt, Cornwall, N. Y.....45
*House of Sherley W. Morgan, Princeton, N. J.....381
*House of J. Scott Parrish, Richmond, Va., H. S. Gillespie.....105
*Layout of Automotive Buildings, The, Harold F. Blanchard.....281
*Moorestown Trust Company, The, Moorestown, N. J., Harold Donaldson Eberlein...363
*New Architecture and the Master Sculptor, The, Leo Friedlander.....1
*On the Designing of Fire Houses.....586
*Sales and Service Buildings, Garages and Assembly Plants, Albert Kahn.....209
*Salon, Hotel de Tesse, Paris, C. Hamilton Preston 97
*Sculpture of a Modern Pediment, The, Edwin J. Hipkiss.....319
*Shop Windows and Shop Fronts, Leigh French, Jr.....177
*Sketching in the Chateau Country, Eugene F. Kennedy, Jr.....313
*Small Country House in the Colonial Style, The, R. C. Hunter.....77
Some Observations on Commercial Architecture, Harvey Wiley Corbett.....176
Education Announcement of Summer Travel Course in Europe, Cambridge School of Domestic Architecture and Landscape Architecture, and the Lowthorpe School of Landscape Architecture, Groton, Mass. May, 71
Announcement of 1927 Summer School and Tour for American Students conducted by Prof. Paul Valenti, School of Architecture, Washington University, St. Louis....April 71
Announcement of new Traveling Fellowship in U. S. for French Architects.....April 71
American Academy in Rome—Annual Competitions for Fellowships.....March 69
Course in Construction at M. I. T.....Feb. 65
Fellowship for Research.....June 71
Le Brun Scholarship.....Jan. & May 63, 71
Summer Courses in Europe.....June 71
Engineering Heating and Ventilating of Garages, Walter Tusch.....257
Heating and Ventilating Public Buildings, Alfred J. Offner.....613
*Mechanical Equipment of the Garage, The, Ralph Harrington Doane.....259
*Structural Fire Prevention for Large Garages, C. Stanley Taylor.....341
Expositions Announcement of Third Pan-American Exposition of Architecture, Buenos Aires.....March 69
*1927 Exposition of Architecture and Allied Arts, New York.....361
Heating Heating and Ventilating of Garages, Walter Tusch.....257
Public Buildings—Heating and Ventilating, Alfred J. Offner.....613
Obituary Gillies, John Wallace.....April 71
Hopkins, Walter L.....Jan. 63
Long, Birch Burdette.....April 71
Lowell, Guy.....71
Office Practice What Does the Architect Owe the Manufacturer? Oren Thomas.....479
Criticism and Ethics, Aymar Embury, II.....73
Public Buildings *Capitol of the Philippines, The, Charles G. Loring.....537
*City and Town Halls, Charles G. Loring....561
*Designing Capitol Buildings, Joseph H. Freedlander 505
*Designing and Planning of Court Houses, A. Ten Eyck Brown.....513
*Essex County Hall of Records.....509
*Fire Alarm Headquarters, Boston.....609
*Fire House and Auditorium, Larchmont, N. Y.....585
*On the Designing of Fire Houses.....586
Heating and Ventilating Public Buildings, Alfred J. Offner.....613

Index to Illustrations According to Architect

A

Allen, Frederick W. (Sculptor) Pediment, New York County Court House.....319, 320
Allen, Gordon, Second Prize Design, Cape Cod Cottage Competition, ex pl.....74
Allison & Allison, Thirteenth Church of Christ Scientist, Los Angeles, ex. in. pl.....**77-80**
Wilshire Boulevard Congregational Church, Los Angeles, ex. in. pl..... **84-88**

B

Baum, Dwight James, House, Mrs. Fayette Baum, Riverdale-on-Hudson, N. Y., ex. pl. 72
Beers, William Harmon, House, Mrs. Lucy Work Hewitt, Cornwall, N. Y., ex. in. pl.....45-48 **9-12**
Benedict, J. B., F. C. Cullen Garage, Denver, ex. pl.....**41**
Sales Room, Thompson Motor Car Co., Denver, in.....312
Town Hall, Littleton, Colo., ex. pl. (detail drawing).....561, **117**
Bigelow & Wadsworth, Building at Tremont & Avery Sts., Boston, ex.....188
House, Eben S. Draper, Hopedale, Mass., ex. in. pl.....**65-72**
Birge, Charles E., Uppercu Cadillac Corporation Salon, New York, ex. in.....309, **60**
Bottomley, William Lawrence, House, J. Scott Parrish, Richmond, ex. in. pl.....106-112
Municipal Building, Plainfield, N. J., ex. (Laurence F. Peck, Assoc.).....562
Briggs, L. W. Co., Fire Alarm Telegraph Station, Worcester, Mass., ex. pl.....587
Brown, A. Ten Eyck, Clarke County Court House, Athens, Ga., ex. pl.....514
Dade County Court House and Miami City Hall, ex. pl. (August Geiger, Assoc.).519, 520
Fulton County Court House, Atlanta, ex. pl. (Morgan & Dillon, Assoc.).....516
Orleans Parish Court House, New Orleans, ex. pl. (F. W. Brown, P. Thornton Marye, Assoc.) 515
Rowan County Court House, Salisbury, N. C., ex.....513
Brown, Frank Chouteau, Shop Front on River Street, Boston (John H. Enright, Assoc.) 177
Brown, F. W. (See A. Ten Eyck Brown)
Bullard, Roger H., House, J. Wharton Poor, Flushing, N. Y., ex. in. pl.....93, 94

C

Cain, William (See Joseph Emmett Kelly)
Carmaega & Nichols, Capitol of Porto Rico, San Juan, ex. pl.....**104**
Carneal & Johnson, Fire Alarm Station, Richmond, ex. pl.....610
Casale, James E., Shop Front, 3 E. 47th St., New York, ex.....190
Cellarius, Charles F., Fire Station, Mariemont, O., ex. pl.....**124**
Chamberlin, G. Howard, House, Peter A. H. Voorhis, Yonkers, N. Y., ex. in. pl....391, 392
Childs & Smith, Doorway, First National Bank, Davenport, Ia., ex.....28
Doorway, First National Bank, Neenah, Wis. ex.....26
Doorway, First National Bank, Wisconsin Rapids, Wis., ex.....27, **6**
Doorway, Hardware Mutual Insurance Bldg., Stevens Point, Wis., ex.....27, **8**
Doorway, National Manufacturers' Bank, Neenah, Wis., ex.....**5**
Doorway, State Bank & Trust Co., Evanston, Ill. 26
Doorway, Northern States Life Insurance Co. Bldg., Hammond, Ind., ex.....27, **7**
Clarkson, Allan C., Third Prize Design, Cape Cod Cottage Competition, ex. pl.....75
Coffin, Marian G. (Landscape Architect, House, G. Herman Kinnicut, Far Hills, N. J., ex. (Cross & Cross, Archts.).....473
Entrance Court, House, Charles H. Sabin, Southampton, N. Y., ex. (Cross & Cross, Archts.) 476
Cooper, John N., Chrysler Sales Room, Pasadena, ex.....**42**
Show Room, Marmon Motor Car Co., Los Angeles, in.....310
Coote, Arthur W., House, C. T. Southwick, Great Neck, N. Y., ex. in. pl.....**1-4**
Cross & Cross (See Marian C. Coffin)
Curlett & Beelman, Elks' Building, Los Angeles, ex. in. pl.....**17-22**

D

Davis, Dunlap & Barney, Moorestown Trust Co., Moorestown, N. J., ex. in. pl. 363, 364, **73-76**
Day & Klauder, Plant for Kelly Press Division, American Type Founders Co., Elizabeth, N. J., ex. in. pl.....170-174
Dennison & Hirons, Fire House, Vermilyea Ave., New York, ex. pl.....**121**
Derrick, Robert O., Detroit Garages, Inc., Detroit, ex.....214, 233, 235
Pittsburgh Garages, Inc., Pittsburgh, in. 234,240
Ten Story Ramp Garage Bldg., ex.....240
Doane, Ralph Harrington, Bowdoin Square Garage, Boston, ex. in. pl.....259, 262, **49**
Motor Mart Garage, Boston, in.....262
Insular Capitol, Manila, ex. in. pl..537, 538, **103**

E

Eggers, Otto R. (See Charles F. Mink)
Ellington, Douglas D., Fire Station, Asheville, N. C., ex. pl.....559
Embury, Aymar II, House, F. D. Bartow, Woods Hole, Mass., ex. pl. (Lewis E. Welsh, Assoc.).....89, 90
Enright, John H. (See Frank Chouteau Brown)

F

Favrot & Livaudais, Ltd., Clarke's Strand Garage, New Orleans, ex.....235
Forster, Frank J., House, Charles H. Cuno, Meriden, ex. pl.....397, 398
House, Mrs. Grace M. Burnham, Great Neck, N. Y., ex. pl.....399, 400
Real Estate Office, Great Neck, N. Y., ex. pl.....483, 484
Freelander, Joseph H., Model, Missouri Capitol Competition, ex. pl.....506
Municipal Building, White Plains, N. Y., ex. pl.....562, **118**
Friedlander, Leo (Sculptor and Architect), "The Three Wise Men" Sculptured for a Chapel at Berkeley, Cal.....4
Symbolic War Memorial.....5
Frost & Raymond, House, James H. Cleaves, Winchester, Mass., ex. pl.....95, 96
Fulton, George, Jr., House at Scarsdale, N. Y., ex. pl.....393, 394
House in Westchester County, N. Y., ex. pl.....395, 396

G

Geiger, August (See A. Ten Eyck Brown)
Gilbert, Cass, Essex County Court House, Newark, ex. pl.....**109**
Minnesota Capitol, St. Paul, ex. pl.....**101**
West Virginia Capitol, Charleston, ex. pl., ...Frontis., 507, 508
Goodhue, Bertram Grosvenor Associates, Nebraska Capitol, Lincoln, ex.....**102**
Green & Wicks (See William Pitkin, Jr., and Seward H. Mott)
Groves, Eugene G., Mesa County Court House, Grand Junction, Colo., ex. pl.....**112**
Grunsfeld, Ernest A., Jr., House, Paul A. Rie, Port Washington, N. Y., ex. pl. (First Prize in Common Brick House Competition —Clarence E. Stein, Assoc.).....66
Guerra, Cesar E., Nash Motor Car Co. Show Room, Havana, ex.....**48**
Guilbert & Betelle, Essex County Hall of Records, Newark, ex. pl.....509-512
Gutterson, Henry H., White Truck Co. Garage and Service Bldg., San Francisco, ex. pl...**36**

H

Haldeman, H. F., Stutz Sales and Service Building, Hollywood, Cal., ex.....**53**
Harmon, Arthur Loomis, Shelton Hotel, New York, ex.....3
Hart, Russell E., "Parthenon" Nashville, ex. pl 433-436
Hartman, Charles C., Fire Station, Greensboro, N. C., ex. in.....591
Helmle & Corbett, Bush Terminal Bldg., New York, ex.....6
Hoadley, David, Wheeler-Beecher House, Conn. (1805), ex. in.....193-200, 503, 504
Hood, Raymond M., Tribune Tower, Chicago, ex. (John Mead Howells, Assoc.).....7
Hook, C. C., City Hall, Charlotte, N. C., ex...564
Hoppin & Koen, Albany County Court House, Albany, ex.....517
Howe, Manning & Almy, First Prize Design, Cape Cod Cottage Competition, ex. pl.....76
Howells, John Mead (See Raymond M. Hood)
Hunter, R. C. & Bro., House, Elizabeth, N. J., ex. pl.....79
House, Springfield, N. J., ex. pl.....78
House, Union, N. J., ex. pl.....80
Huszagh & Hill, Aragon Ballroom, Chicago, ex. in. pl.....**13-16**

J

Jones & Furbringer, Court House, Memphis, ex. pl.....**108**

K

Kahn, Albert, Inc., Ford Motor Car Co., Sales and Service Bldg., N. Y., ex.....209
Ford Motor Car Company Assembly Plant, St. Paul, ex. in.....210, 211
Dearborn Engineering Laboratory, Dearborn, Mich., ex. in.....212, 213

Fort Shelby Garage, Detroit, in.....214
Dodge Brothers Sales Room, Detroit, ex.....**34**
Packard Sales & Service Bldg., Detroit, ex.....306, 310, 211, **35, 64**
Accessories and Garage Bldg., Detroit, ex..237
Evening News Garage, Detroit, in.....262
Chevrolet Workshop, Detroit, in.....264
Evening News Garage, Detroit, ex.....342
Keffer & Jones (See Vorse, Kraetsch & Kraetsch)
Kelly, Joseph Emmett, Real Estate Office, Homeland Co., Hastings, N. Y., ex. pl. (William Cain, Assoc.).....293, 494
Kennedy, Frederick, Studebaker Sales Building, Pasadena, ex.....**45**
Kilham, Hopkins & Greeley, Fire Station, Beverly, Mass., ex. pl.....592
Fire Station, Salem, Mass., ex. pl. (P. H. Smith, Assoc.).....**126**
Kregelius, Herman, Fire Station and Signal Headquarters, Cleveland, ex.....586, 589
Krokyn, Browne & Rosenstein, Shop Front on Charles St., Boston, ex.....184,185

L

Lamb, Thomas W., Ziegfeld Theater, New York, ex. in. pl. (Joseph Urban, Assoc.) 414-416, **81-83**
Land, H. H. (See J. W. Smith)
Larson, Jens Fredrick, Town Hall, Lebanon, N. H., ex. pl.....568, **113**
Larson & McLaren, Baker Garage, Minneapolis, ex. in.....235, 239, **33**
Law, Law & Potter, House, William W. Cargill, Madison, Wis., ex. pl.....389, 390
House, Dr. William A. Mowry, Madison, Wis., ex. pl.....387, 388
Lenygon, Francis, Shop Front, 16 East 60th St., New York, ex.....190
Lockwood, Greene & Co., Inc., Bolling Jones Building, Atlanta, ex.....236
Loeb, Laurence M., House, Louis Jaskow, New Rochelle, N. Y., ex. pl. (First Mention Common Brick House Competition).....70
Loring, Charles G., Shop Building, Chestnut St., Boston, ex.....182, 183
Lowell, Guy, New York County Court House, ex. pl.....**105**
Ludlow & Peabody, Municipal Building, Teaneck, N. J., ex. pl.....565, **114**
Lyman & Place, City Hall, Yuma, Ariz., ex. pl.**116**

M

MacLaren, T., Central Fire Station, Colorado Springs, ex. pl.....586, 588
MacPherson, James, Real Estate Office, Canterbury Realty Corp., Great Neck, N. Y., ex. pl.....487, 488
Mann & MacNeille, Real Estate Office, Russell Gardens, Great Neck, N. Y., ex. pl.481, 482
Marston, Van Pelt & Maybury, Automobile Sales Building, San Franncisco, ex.....**52**
Pierce Arrow Sales Building, Pasadena, ex..**37**
Marye, P. Thornton (See A. Ten Eyck Brown)
Mayo, Cowell, Bissell & Co., Fire Alarm Office, Stockton, Cal., ex. pl.....611
McCabe, George M., Show Windows on two streets (The Hayden Co.), ex.....191
McKenzie, Voorhees & Gmelin, New York Telephone Co. Bldg., West Street, New York, ex. 2
McKim, Mead & White, Rhode Island Capitol, Providence, ex. pl.....**97**
Mellon, E. P., Mellon Building, Choate School, ex. in. pl.....129-132, **23, 24**
Miller & Reeves, House, Hugh Bone, Columbus, O., ex. pl.....81, 82
House, Homer Bostwick, Columbus, O., ex. pl. 83, 84
House, William A. Fritsche, Columbus, O.85, 86
Mink, Charles F., Fire House and Auditorium, Larchmont, N. Y., ex. pl. (Otto R. Eggers, Assoc.).....585, **128**
Moore, Frank, Fire House and Town Hall, Larchmont, N. Y., ex. pl.....**120**
Morgan, Sherley W., House, Sherley W. Morgan, Princeton, N. J., ex. in. pl.....381-384
Morgan & Dillon (See A. Ten Eyck Brown)
Morgan, Walls & Clements, Automobile Sales Bldg., Lord Motor Car Co., ex.....**57**
Franklin Motor Car Co., Automobile Sales & Service Bldg., Hollywood, Cal., ex. pl.....**58**
Interior of an Automobile Sales Room..305, 308
Sales and Service Bldg., Gotfredson Truck Corp., Los Angeles, ex. pl.....**46**
Shop, Garage and Office Bldg., Hollywood, Cal., ex.....**54**
Star Motor Car Co. Sales Building and Garage, Hollywood, Cal., ex. in. pl.....307, **51**
Mountjoy & Frewen, Garage and Sales Building, Buick Motor Co., Denver, ex. pl.....**44**
Lincoln Automobile Agency Building, Denver, ex.....**47**
Musick, G. Meredith, Entrance to Republic Building Garage, Denver, ex.....238

O

O'Connell & Shaw, Fire Alarm Headquarters, Boston, ex. in. pl.....609, 612
Ogilvie, David A., House, J. H. Kelleher, Pasadena, ex. pl. (Second Prize in Common Brick House Competition).....67
Olcott, Horatio W., Fire Station and Town Hall, Milburn, N. J., ex.....561, **125**

P

Park & Morgan, House, Dr. D. B. Sinclair, Princeton, N. J., ex. in. pl.....87, 88
Parker, William Stanley, Shop Front.....192
Parmelee, E. D., Real Estate Office, Larchmont, N. Y., ex. pl.....491, 492
Patterson & Willcox, Real Estate Office, Kenilworth, Great Neck, N. Y., ex. pl....485, 486
Patton, Lewis C., Todhunter, 119 E. 57th St., New York, N. Y, ex.....180, 181
Peck, Laurence F. (See William L. Bottomley)
Pell & Corbett, Municipal Group, Springfield, Mass., ex.....567
Pierce, Harry L., Lincoln Sales and Service Bldg., Hollywood, Cal., ex.....**50**
Pitkin, Jr., William and Mott, Seward H. (Landscape Architects), Forecourt Entrance, House, Mrs. Henry Stephens, Grosse Point, Mich., ex. (Charles A. Platt, Archt.) 474
Forecourt Entrance, House, D. M. Ferry, Jr., Grosse Point, Mich., ex. (Trowbridge & Ackerman, Archts.).....475
House in Buffalo, ex. (Green & Wicks, Archts.) 480
Platt, Charles A. (See William Pitkin, Jr., and Seward H. Mott, Landscape Archts.)
Pope, John Russell, City Hall and Memorial Monument, Plattsburg, N. Y., ex. pl,. 566, **119**
Post, George B. & Sons, Hotel Statler Garage, Buffalo, ex. pl.....**40**
Pringle & Smith, Ramp Garage, Atlanta, ex. in.....237, 263
Purdy, Arthur, Office and House of Thomas J. Good, Pelham Manor, N. Y., ex. pl. 489, 490

R

Radcliff, E. S. (See J. W. Royer)
Rankin, Kellogg & Crane, Byberry Fire House, Phila., ex. pl.....**122**
Hamilton County Court House, Cincinnati, ex. pl.....**107**
Ray, George N., Packard Sales Room, Washington, ex.....**39**
Richards, McCarty & Bulford, Hardin County Court House, Kenton, O., ex. in. pl.....**110**
Rickard, Greville, Dawson Building, 19 E. 60th St., New York, ex.....337-340
Ritchie, Parsons & Taylor, Police Department Headquarters, Boston, ex. in. pl.....539-544
Roberts, E. E., Packard Motor Car Co. Show Room, Chicago, in.....308
Rogers, Willard, Catawba County Court House, Newton, N. C., ex. in. pl.....**106**
Royer, J. W., Douglas County Court House, Superior, Wis., ex. (E. S. Rauchh, Assoc.) 517

S

Sanger, Prentice, House, C. L. Hay, Newbury, N. H., ex. in pl.....**25-32**
Sawyer & Watrous (See Vorse, Kraetsch & Kraetsch)
Scheffer, Alfred A., House, D. W. White, Douglas Manor, N. Y., ex. in. pl.....91, 92
Schmidt, Mott B., Remodeled Building on Madison Ave., New York, ex.....186, 187
Schultze & Weaver, Biltmore Garage, Los Angeles, ex.....**62**
The Breakers, Palm Beach, ex. in. pl..... 453-456, **89-96**
Shepard & Stearns, Shop Window at 90 Berkeley St., Boston, ex.....189
Shoemaker, Marshall N., Washington Terminal Garage, Newark, ex. pl.....**55**
Shreve & Lamb, Show Window, 131 E. 57th St., New York, ex.....191
Simon & Bassett, Town Hall and Fire Station, Swedesboro, N. J., ex.....**127**
Smith, D. Curtis (See J. W. Smith)
Smith, J. W., Ouachita Parish Court House, Monroe, La., ex. pl. (H. H. Land & D. Curtis Smith, Assoc.).....**111**
Smith, P. H. (See Kilham, Hopkins & Greeley)
Smith, Hinchman & Grylls, Grand Circus Garage, Detroit, ex.....236
Dodge Brothers Motor Car Co., Detroit Show Room, in.....311
Spink, C. R., Pierce Arrow Sales and Service Bldg., Hollywood, Cal., ex.....**43**
Stebbins & Watkins, Fire Station, Danvers, Mass., ex.....590
Stein, Clarence S. (See Ernest A. Grunsfeld, Jr.)
Strickland, Blodget & Law, Shop and Office Building, 24 Newbury St., Boston, ex. 178, 179
Sturgis, R. Clipston, Robbins Memorial Town Hall, Arlington, Mass., ex. in.....563
Swartwout, Egerton, Missouri Capitol, Jefferson City, ex. pl.....**98-100**
Town Hall, Milford, Conn., ex. pl.....**115**

T

Thomas, Andrew J., Real Estate Office, Fox Meadows, Hartsdale, N. Y., ex. in .pl. 495, 496
Tibbitts, Armand R. (Landscape Architect), Entrance Court, House, Charles Stone, Locust Valley, N. Y., ex.....477
Tooker & Marsh, Studebaker Show Rooms and Garage, Brooklyn, ex.....**59**
Topnick, John C., House, John C. Topnick, Pittsburgh, ex. pl. (Third Prize in Common Brick House Competition).....68
Trowbridge & Ackerman (See William Pitkin, Jr., and Seward H. Mott, Landscape Architects)
Tyre, Phillip S., Show Room and Accessory Shop, Ford Motor Co., Philadelphia, ex. pl., **38**
Packard Garage, Philadelphia, in...260, 261, 309

U

Urban, Joseph (See Thomas W. Lamb)

V

Vorse, Kraetsch & Kraetsch, Municipal Court and Public Safety Building, Des Moines, ex. (Keffer & Jones; Sawyer & Watrous, Assoc.) 564

W

Walcott, Russell S., House, Donald B. Douglas, Winnetka, Ill., ex. pl. (Fourth Prize in Common Brick House Competition).....69
Way, Charles H., House, Miss Georgia H. Emery, Brookline, Mass., ex. pl. (Second Mention Common Brick House Competition) 71
Weibly, W. F., City Hall, Burlington, Iowa, ex. 565
Welsh, Lewis E. (See Aymar Embury II)
Whilden, O. D., Fire Station, Birmingham, Ala., ex.....590



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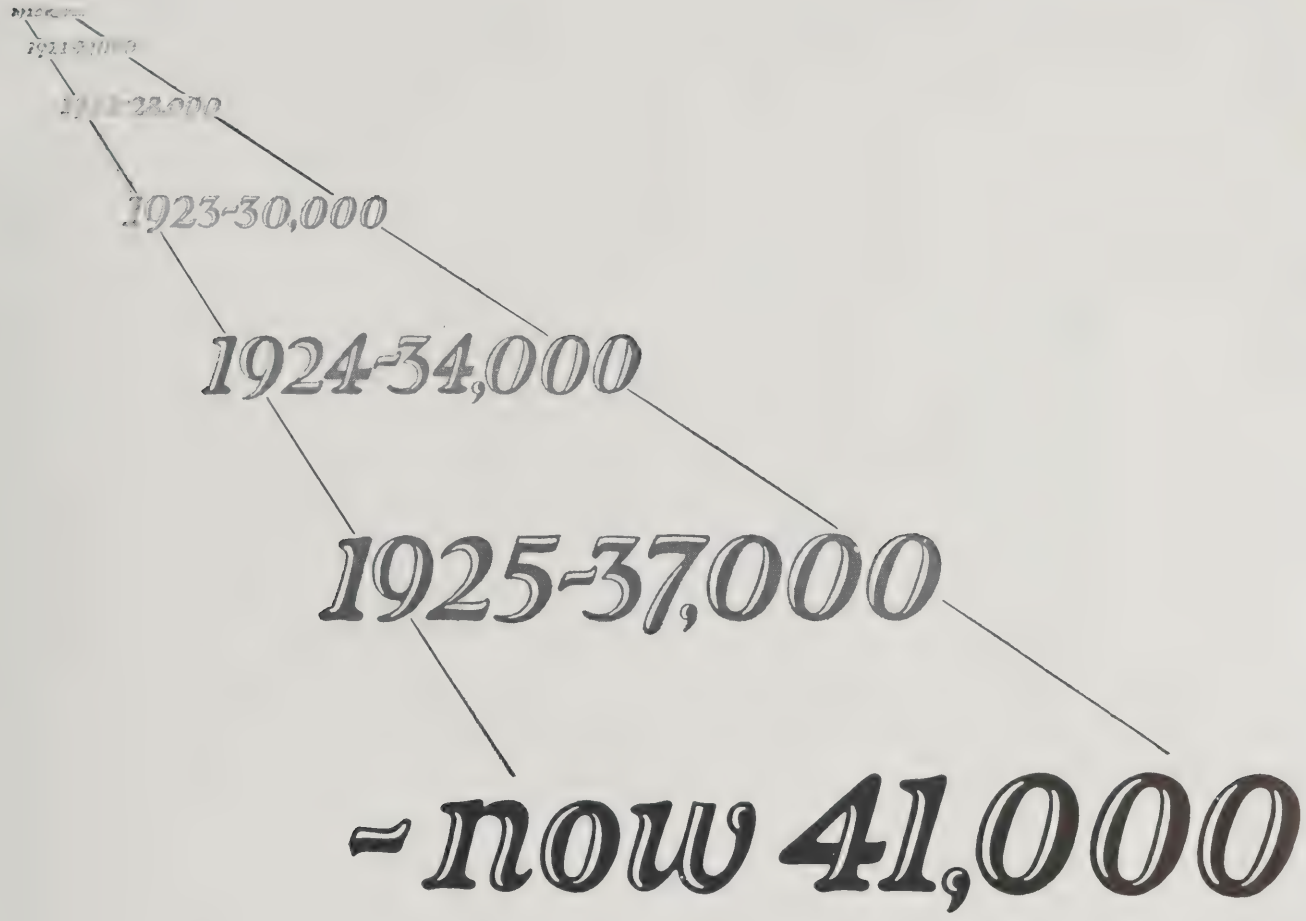
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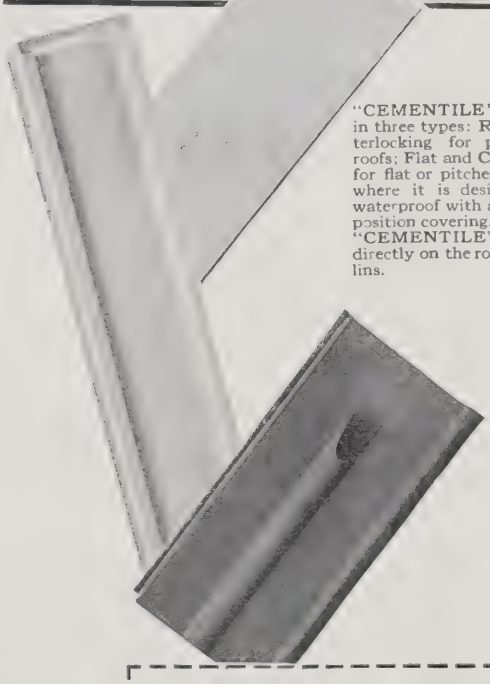
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BOOK DEPARTMENT

Antiques and Their Collecting

A Review by WAYNE PETTIT

A VOLUME quite as worthy of the poet's ear as of the hand of the art connoisseur is "The Collecting of Antiques," written by Esther Singleton, present editor of *The Antiquarian* as well as author or editor of a number of distinguished books for readers interested in the fine arts. Her discriminating pen describes, with delicate skill and keen, experienced insight, various types of collectors' hobbies, ranging from china through furniture to textiles, clocks and metal work, in terms sufficiently lucid for the novice, yet complex enough to hold the professional's interest and attention.



Eighteenth Century Chintz, "Apotheosis of Washington"
Illustration from "The Collecting of Antiques"

The first chapter, comprising fully a third of the entire volume, deals with china, the rapid growth of "China-mania," the fascination of each variety, its artistic appeal, the grace of each pattern. Tracing the original taste in china from the intricate designs, the imaginative decorations of the Orientals, she gives a foundation for the development of the more modern Chelsea and Bow, really the first to make a definite appearance in the English china world, and she dwells upon the tints of Derby, rivaled only by Worcester in splendid luster. Following the growth of English ceramics chronologically rather than in relation to substance or pattern, Leeds, certainly one of the most popular for collectors of porcelain ware, appears, and then Lowestoft. And in the midst of this practical porcelain discourse, Miss Singleton, with delightful naïvete and sophisticated maturity, narrates the well known "willow pattern" history, skillfully concealing uninteresting but useful facts under an amusing story. With amazing dexterity this facile-penned woman gives us the quite romantic but jolly explanation of the English "Toby jugs" in the very next paragraph. Certainly an able collector, with the fantastic pen of the story teller! Few authors deal so fully with the history of china in England.

Miss Singleton then turns to china better known—at least in this country,—the Blue Staffordshire, Wedgewood, the celebrated Jasper ware, and then to Spode, connoting nothing less than "high tea" in a stately old room filled with essence of aged beauty. Luster—silver, gold and copper! She deals with foreign wares; Dresden, which in reality directed the way for early English; Sevres guided by the elegant taste of Mme. de Pompadour, gorgeous in ornamentation; Persian pottery whose iridescent surfaces cause the imagination to glow with dreams of wealth of untold centuries—musk, minarets, magic. In contrast with this exotic dream of fairy china, the charm of glass is as cool as a water lily, seemingly too aloof, too aristocratic to be affected by the human touch, impassionate except in its glorious color, its translucent glamour. It is impossible to give even the names of all the glasses described and illustrated, but the Waterford, scintillating and sparkling, gleaming and glistening; Venetian, designed to please the æsthetic taste of the most discriminating; Bristol, famous for its glorious deep blues—none of these three can be passed by slightingly.

From static, rigid china we turn to the warm glow of English and American silver, great quantities of which must have existed in the early days,—huge chargers for the boar's head; trenchers, exquisite in workmanship; drinking goblets for the enormous quantities of ales and wines consumed to wash down the more solid foods. Outside of monasteries few actual examples of these earlier types are extant, not only because of the disastrous demands of the king's exchequer, but because of the ever-changing claims of fashion. The gradual vogue for coffee and tea, the more rapid acceptance of chocolate, the innovation of the fork, all called for constant changes in patterns and pieces.

After delighting our eyes and ears with these charming descriptions, Miss Singleton calmly asserts that there is really no use bothering with the ornamental,—china, old silver, brasses, and glass,—unless we have, primarily, the background for these objects—furniture; for, after all, furniture is the essential in household comfort or beauty, be it Chippendale or Hepplewhite or Adam.

This volume is not astoundingly unique because of any startling discoveries or revelations; yet in no one place, regardless of the direction of one's interest, does the writer fail to hold one's attention. Volume on volume has been written on each of the subjects with which Miss Singleton deals, but one can find few books which cover as adequately what Miss Singleton portrays by her illustrations of pieces and by her careful, accurate language.

THE COLLECTING OF ANTIQUES. By Esther Singleton. 338 pp., 7½ x 9¾ ins. Price $7.50. The Macmillan Company, New York.

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It would be impossible to over-emphasize the value of this work to anyone interested in its subject.

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OLD ARCHITECTURE IN SOUTHERN MEXICO. By Garrett Van Pelt, Jr., A.I.A. 125 pp., 10 x 13¾ ins. Price $10 Net. J. H. Jansen, Cleveland.

THE traveler who crosses the Rio Grande from Texas into Mexico enters not only into another country but literally into another age. The first day's journey may be through a country best described as "nondescript," having the ugliness of the "States" and the squalor of Mexico without being really representative of either. But presently the prospect changes, and the traveler is in a region delightfully and refreshingly "foreign,"—in an age which might be the eighteenth century or the seventeenth,—in short he is well into Mexico, a land which notwithstanding all its revolutions and upheavals is still as Spanish as the provinces of Spain itself.

Everything about him belongs to other times and to other lands. To a traveler wearied by life in the usual hideous American city,—its dirty and shabby water front, uncouth suburbs, and the general meanness and unevenness of even the most opulent quarters of the city,—there come visions of towns made up of low buildings—white, cream, pink, buff, or gray—chiefly two or three stories high; of walled-in gardens, whose trees are seen above the walls, and of whose greenery glimpses are caught through partly open doors or wrought iron gates; of cities whose skylines are enlivened by countless church towers which loom up above the low, spreading masses of building; of many domes covered with tiles of brilliant colors—blue, red, green, orange, black and gold, which flash in the blazing sunlight. Entering the town he will find it to be surprisingly quiet and leisurely,—narrow, stone-paved streets which occasionally broaden out into tiny squares; moss-grown fountains; metal grilles at windows or doors; countless open church doors, through which one sees cool, shaded, cavernous interiors, and perhaps altar *retablos,* carved and richly colored and gilded.

It may be that the effort to adapt for use in California, Florida and elsewhere some of the types of Spanish architecture (to add further to the already bewildering number of "styles" already in use) has been responsible for the appearance of the many recent works on Spain and Spanish architecture. Only too many, however, have failed of being as helpful as they might have been because so many of their illustrations (which are really what are most important) have been of buildings which are not, at present at least, of particular interest,—florid facades of churches, domes of cathedrals or convent chapels, fronts or courtyards of ancient monasteries or episcopal palaces turned into city halls or municipal buildings. Mr. Van Pelt, however, an architect of Pasadena, has included in this volume illustrations of what are much more practical,—the exteriors of medium sized or small houses in town or country, their patios, arcades, balconies, doors and windows and metal grilles. Mexican architecture like that of Spain gains a great part of its effectiveness from its abrupt contrast—extreme simplicity brought into contrast with luxuriant use of ornament. But even this use of ornament when carefully analyzed will be found comparatively easy to achieve and particularly appropriate for working out in stucco or cast stone; in fact with the aid of a few simple moulds one could produce in durable material many of the capitals, corbels, balustrades, pilasters, spandrels and entablatures, which make Mexican and Spanish buildings interesting.

SPANISH INTERIORS AND FURNITURE; Volume 3. By Arthur Byne and Mildred Stapley. 300 Plates, 9¾ x 13¼ ins. Price $25. William Helburn, Inc., New York.

SEARCH for novelty in the way of architecture, interior decoration and furnishing which during the last few years has led to the wide use of styles English, French, and Italian, has more recently brought about interest in the Spanish, and considerable experimenting (much of it upon a large scale) has led not only to increased interest in Spanish types but also to a more intelligent understanding of their use. But it is open to question whether, after all, Spanish types are generally appropriate for use in America today. The style could never be done justice to unless handled with a reserve which is utterly beyond the comprehension of the average American home owner, and if it be treated in the way which 99 per cent of Americans desire it will lose every vestige of its character. Then again it is a type which requires for its proper interpretation large areas and extensive wall spaces; it would hardly lend itself well to the tiny houses which high building costs render necessary today. Thus, unless one is prepared to build upon a fairly generous scale and to exercise considerably more than usual restraint in demanding ornament (and particularly "comfort"), it would be better by far to make use of some other type,—perhaps that of the English cottage or manor house, which in fact meets the average American much more than half way, and which can be properly developed upon a scale large or small.

These observations upon general use of the Spanish type have been suggested by an examination of Volume 3 of this excellent series on Spanish domestic interiors. Mr. and Mrs. Byne are Americans who for many years have lived in Spain and who have acquired a deep understanding and appreciation of things Spanish. Their well trained taste in architecture and decoration leads of course to their presentation of illustrations of excellent interiors, but the excellence is primarily architectural, and unless one is prepared to pay for architectural excellence with considerable sacrifice of domestic ease, the Spanish type had best be let alone,—admired, but not often used. There are certain people who care little or nothing for ease and comfort if only a thing be correct architecturally. For these, but not often for others, is the Spanish type, if the style is to be successfully used.

The Spanish interior, like the Italian, is highly architectural. It makes large use of textured plaster for walls, and ceilings are likely to be either of plaster or of wood treated in a way which is primarily architectural. Floors are likely to be of brick, stone or tile, or sometimes of wood, but with only very sparse use of rugs, and more often of none whatever. Furniture is chiefly of wood and rectilinear; only very rarely is upholstery used, and even then with a complete disuse of springs except where considerable liberty has been taken with the type. Great splendor is of course possible by using ironwork and tiles and other forms of pottery, and it is largely this beauty which leads many to an attempted use of the Spanish type, very often resulting in over-decoration.

From the illustrations contained in this volume architects and interior decorators may readily acquire a wealth of suggestion. The genius which devised the marvels of wrought iron, carved wood and polychrome tile found means of using them to produce incomparable effects,

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Kensington Schoolhouse, Great Neck, N. Y.
Wesley Sherwood Bessell, *Architect*

THIS volume, a companion to another published in 1914, records the results of endless study and experiment in different parts of the country, summed up and presented. By illustrations of exteriors and interiors, by floor plans and carefully written descriptions and articles by well known architects and educators, the present high standard of schoolhouse design is made plain, and these results which have been achieved by a few architects and school boards are thus made possible to all architects who are interested in schoolhouse design. The compiler has selected from almost 1000 exteriors and floor plans the school buildings to be illustrated, and the volume records "a process of innovation and elimination, namely, the introduction from time to time of features which have been deemed desirable and practical, and the elimination of things which, owing to changed school methods, are no longer required."

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though always in the Spanish manner, which as has already been said is not easily adapted to American needs; only in rare instances is this beautiful type rendered sufficiently "domestic" according to American ideas to make it practical, though the fact that it is being done at all proves the possibility of its achievement. The illustrations in the volume are of course extremely interesting even to the student well acquainted with things Spanish.

ART STUDIES; MEDIÆVAL, RENAISSANCE AND MODERN; An extra number of *The American Journal of Archæology*, 1926. Illustrations and 152 pp. of text, 3¼ x 11¾ ins. Price $7.50. Harvard University Press, Cambridge, Mass.

IN addition to issuing its various numbers throughout the year, *The American Journal of Archæology* publishes annually a volume of richly illustrated essays upon subjects more or less directly connected with archæology and edited by members of the Departments of the Fine Arts at Harvard and Princeton Universities. These annual volumes are indeed treasures of carefully prepared data, the result of much research, and presented by scholars who have made deep study of the topics on which they write. The volume for 1926 covers a somewhat broad field, discussing in ten articles matters connected with painting, sculpture and architecture. Probably of the ten those most interesting to architects are that by J. Puig y Cadafalch on "Decorative Forms of the First Romanesque Style," and that by Georgiana Goddard King in "Fact and Inference in the Matter of Jamb Sculpture," both subjects being highly architectural.

Few studies connected with archæology are more absorbing than that into the architectural style which preceded in southern and western Europe the use and development of the Gothic. This author divides the subject of Romanesque architecture into several parts, the first forming "the last phase of that indefinite period called Carolingian, which flourished during part of the ninth century, the tenth century, and almost all of the eleventh century. Geographically "this first Romanesque school covers a great part of Europe, extending from southern Italy, whence it crosses the sea eastward to the coast of Dalmatia, and westward to the Mediterranean coast of France as far as the southern frontier of Catalonia in the eleventh century, which was the Moorish frontier; from Provence the style ascended the valleys of the Rhone and the Saone and reached into Switzerland and the Rhineland." These lines suggest at once the early Christian "basilica," a law court or market place, which when Christianity emerged triumphant from the catacombs was taken over bodily as a church and found to be so adaptable that use of the type persists even today, the most famous and beautiful of the old basilicas still existing being those marvelous examples at Ravenna.

Architectural treatment of entrances or portals offers another fertile field for specialized study, changing as the treatment did with use of different styles and yet still making the portal the focus or center of architectural richness which generally took a sculptural form. Both of these articles, as well as those not touched upon here, are well illustrated with half-tones of subjects which are either only very little known or almost entirely unknown.

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THIS is a volume newly added to a monumental work on English architecture. Earlier volumes deal with the Tudor, Elizabethan, William and Mary and Queen Anne types, while in this volume the author sums up the architectural progress which culminated during the reigns of the later Georges. The work is replete with illustrations of exteriors and interiors, of great country houses as well as of manor houses and certain minor buildings which afford precedent for use in America today. It fittingly completes a comprehensive treatment of an important subject. It is a volume which in its usefulness will be of great value to architects whose work involves much use of Georgian design. To the student of English architecture it is necessary to complete his library dealing with design in the Tudor, Elizabethan, William and Mary and Queen Anne periods. It is superbly illustrated.

ENGLISH HOMES; PERIOD VI—VOLUME I

Late Georgian, 1760-1820 *By H. Avray Tipping, M. A., F. S. A.* 402 pp., 10½ x 15¼ ins. Lavishly Illustrated. Price $25

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The ARCHITECTURAL FORUM

VOLUME XLVI — *Established 1892* — NUMBER 1

CONTENTS *for* JANUARY 1927

PLATE ILLUSTRATIONS	Architect	Plate
House of C. T. Southwick, Esq., Great Neck, N. Y.	*Arthur W. Coote*	1-4
Doorway, National Manufacturers' Bank, Neenah, Wis.	*Childs & Smith*	5
Entrance, First National Bank, Wisconsin Rapids, Wis.	*Childs & Smith*	6
Doorway, Northern States Insurance Building, Hammond, Ind.	*Childs & Smith*	7
Entrance, Hardware Mutual Insurance Building, Stevens Point, Wis.	*Childs & Smith*	8
House of Mrs. Lucy Work Hewitt, Cornwall, N. Y.	*William Harmon Beers*	9-12
Aragon Ballroom, Chicago	*Huszagh & Hill*	13-16
The Forum Studies of European Precedents (Plates 49-56)		

LETTERPRESS	Author	Page
Cover Design: Gateway of the Alcamgara Bridge, Toledo *From a Drawing by Louis C. Rosenberg*		
The Editor's Forum		63
In the Close at Canterbury *From a Water Color by Otto F. Langmann*		*Frontispiece*
The New Architecture and the Master Sculptor	*Leo Friedlander*	1
Some Recent Monumental Doorways	*William J. Smith*	25

LETTERPRESS	Author	Page
House of Mrs. Lucy Work Hewitt, Cornwall, N. Y.	*William Harmon Beers, Architect*	45
Common Brick House Competition		65
The Architects' Forum "Criticism and Ethics"		73
Cape Cod Cottage Competition		75
The Small Country House in Colonial Style	*R. C. Hunter*	77
House of Hugh Bone, Esq., Columbus, O.	*Miller & Reeves, Architects*	81
Homer Bostwick House, Columbus, O.	*Miller & Reeves, Architects*	83
House of William A. Fritsche, Esq., Columbus, O.	*Miller & Reeves, Architects*	85
House of Dr. D. B. Sinclair, Princeton, N. J.	*Park & Morgan, Architect*	87
F. D. Bartow House, Woods Hole, Mass.	*Aymar Embury II and Lewis E. Welsh, Architects*	89
D. W. White House, Douglas Manor, N. Y.	*Alfred Scheffer, Architect*	91
House of J. Wharton Poor, Esq., Flushing, N. Y.	*Roger H. Bullard, Architect*	93
House of James H. Cleaves, Esq., Winchester, Mass.	*Frost & Raymond, Architects*	95
Salon, Hotel de Tesse, Paris	*C. Hamilton Preston*	97

PARKER MORSE HOOPER, A.I.A., Editor

Contributing Editors:

Harvey Wiley Corbett; Aymar Embury II; Chas. G. Loring; Rexford Newcomb; C. Stanley Taylor; Alexander B. Trowbridge.

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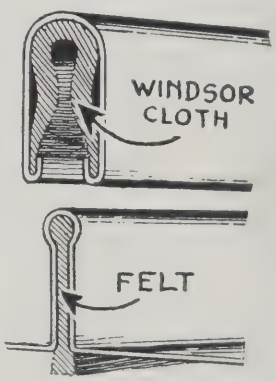


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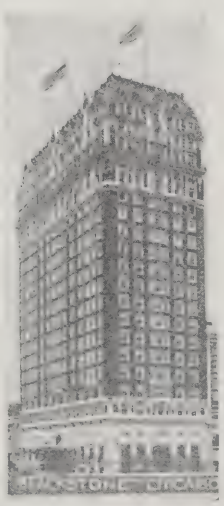
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THE EDITOR'S FORUM

A SERIES OF CONFERENCES

ANNOUNCEMENT is being made of conferences to be given under the auspices of the Architectural League of New York in connection with the Second Exposition of Architecture and the Allied Arts, presently to be opened at the Grand Central Palace, New York. These annual exhibitions always attract a large body of men and women interested in architecture and the allied arts, and a certain number come to New York at that time solely to see the Exposition. In order to increase the educational value of the effort, thereby inducing a still larger number of architects, decorators and craftsmen to attend, it is at present being definitely arranged that there shall be this series of conferences during the mornings of the first week.

On Tuesday, February 22, the subject of this, the first conference, will be "Architectural Polychromy in Ancient Practice." Leon Solon, as Chairman of this day's program, will read a paper on "Polychromy in Ancient Greek Practice." Milton Medary will cover "Color in Gothic Architecture." A third speaker, not yet chosen, will deal with "Use of Color in the Orient." The next morning, February 23, the subject will be "The Architecture of Stage Scenery in Theaters and in Movie Studios." Howard Greenley will act as Chairman of this program and will be assisted by one or two others. On Thursday morning, the subject will be "Architecture in Form and Color." The Chairman, H. Van Buren Magonigle, will be assisted by James Monroe Hewlett and one or two others. On the morning of February 25, the topic will be "The Value of the Skyscraper in Business." A more definite program is to be announced later, when plans for the conferences have been perfected and subjects for discussion determined.

CONTRIBUTING EDITORS

IT is with great pleasure that we are able to announce the names of the distinguished architects who are to act during 1927 as Contributing Editors of THE ARCHITECTURAL FORUM:

Harvey Wiley Corbett;
Aymar Embury II;
Charles G. Loring;
Rexford Newcomb, University of Illinois.
Alexander B. Trowbridge;

THE STEEDMAN FELLOWSHIP

THE Governing Committee of the James Harrison Steedman Memorial Fellowship in Architecture announces the second competition for a Fellowship of the value of $1,500, the holder of which is to pursue the study of architecture in foreign countries, as determined by the Committee and under the guidance and control of the School of Architecture of Washington University. This Fellowship is open on equal terms to all graduates in architecture of recognized architectural schools of the United States. Such candidates, who shall be American citizens, shall have had at least one year of practical work in the office of an architect practicing in St. Louis, and shall be between 21 and 31 years of age at the time of appointment to this Fellowship. Application blanks for registration can be obtained at any time upon written request addressed to the head of the School of Architecture of Washington University, St. Louis, to whom all candidates are required to forward their application blanks not later than January 14, 1927.

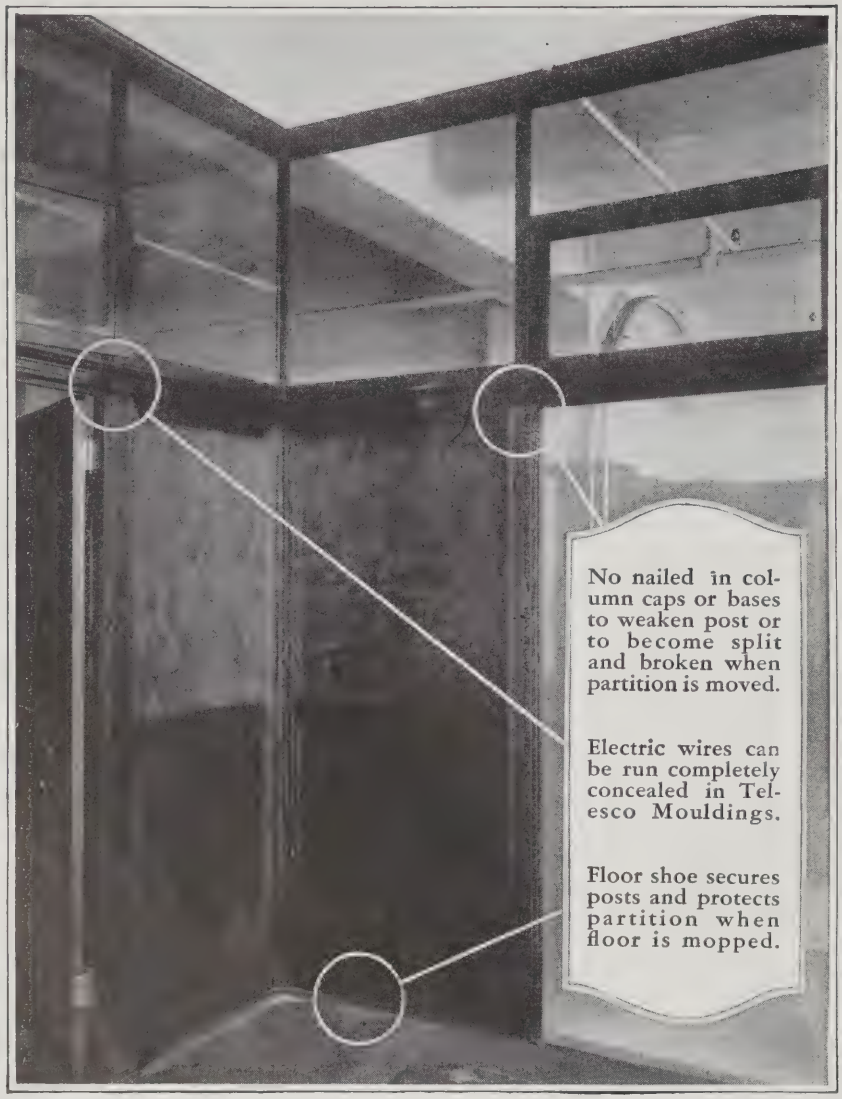
THE LE BRUN SCHOLARSHIP

THE Executive Committee of the New York Chapter of the American Institute of Architects, as Trustees of the Traveling Scholarship founded by Pierre L. Le Brun, announces a competition for the selection of a beneficiary. The program will be issued about December 31, 1926, calling for drawings to be delivered about March 1, 1927. Those wishing to enter the competition should arrange at once for nomination by members of the American Institute of Architects. Nomination blanks can be had of the Secretary of any Chapter, A. I. A., or of the Le Brun Scholarship Committee. Nominations should be sent, so as to be received before January 1, 1927, to the Le Brun Scholarship Committee, care Room 1618, 19 West 44th Street, New York.

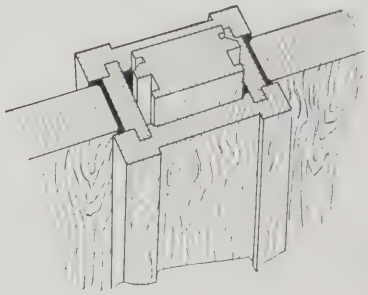
WALTER L. HOPKINS
1876 - 1926

ON October 9 there occurred at Honolulu the death of Walter Lane Hopkins, long a member of the staff of Warren & Wetmore. Identified with the designing and construction of many large hotels, he had gone to Honolulu as his firm's representative in connection with the completion and the ceremonies attending the opening of the new Hawaiian Hotel.

Charles D. Wetmore, on behalf of Warren & Wetmore, expresses the great loss to his firm in a letter, of which a part should be quoted: "In the death of Walter Hopkins, the world of architecture has suffered a great loss. Behind a charming personality was an extraordinary ability, unusual in modern times. He possessed not only a rare capacity for designing and a wonderful sense of color, but the one great quality which makes for the beautiful in architecture,—that of unfailing good taste. In this armor of good taste he worked without effort. His masterful work, therefore, was unstilted and without drabness . Although guided by precedent, he never permitted his work to be unsuited to its purpose."



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The
ARCHITECTURAL
FORUM

Volume XLVI JANUARY 1927 Number 1

The New Architecture and the Master Sculptor

By LEO FRIEDLANDER

PREPARATION of an essay on "The New Architecture" by a sculptor may seem to be an unusual venture, and to the old school of architects a sort of presumption,—an unheard of, unprecedented venture. Being inclined, however, to hand the laurel wreath and the title of "Master Sculptor" to the architect, and in view of my feelings on the subject, my old friends may be more tolerant.

To me the architecture of Egypt has always appeared to be great sculptural masterpieces, their effect heightened by decorative reliefs or incised drawings, artistically designed and harmoniously applied and at all times subservient to the architectural mass, and their scale established by occasional sphinx-like figures placed at the portals. Architecture is and always has been for very practical reasons the mother art, from whose breast came the other arts, painting and sculpture; hence how can we class the mother art in other than the same category with her offspring? From our earliest civilization to the present day, therefore, the architect is really the "Master Sculptor," one who has had powerful influence upon architecture's children. It is important here to explain more clearly my point of view relative to mural painting, the second in the trio. The ancient Greeks and Romans colored their bas-reliefs as they did their sculptures in the round, which was in a sense the birth of mural painting. This form of color decoration finally became emancipated from related form, and developed into a somewhat more ethereal expression in two dimensions, now known as mural painting. Thus one art is evolved from another.

Having been apprenticed at the age of 14 to an architectural sculptor, I had the good fortune to assimilate a great deal of knowledge while in his charge. We executed models for most of the prominent architects in New York, thereby deriving an appreciation of this greatest of the arts subconsciously rather than in the strictly academic way. Such a training develops sculptors conversant with the art of filling space and acquaints the apprentice with the styles and tendencies of the various architects. Where the problem called for a relief, it naturally was a space in elevation to develop. Where a group or a figure in the round was essential, the intelligent filling of a ground plan and elevation was required. So it is that sculpture viewed from many angles is a sort of miniature architecture; or better yet, architecture is a kind of super-sculptural problem. There is, beyond a doubt, a strong inherent structural sense in good sculpture, derived chiefly from an hereditary instinct to build, which is an important factor in the conclusion that all the fine arts were derived from the same practical source, and that this instinctive desire to build meant the birth of architecture and all the rest of the allied arts.

The "New Architecture," so termed since its influence has cast anchor on our shores to stay, is destined (judged from the fervor with which its introduction has taken root and applied itself to our architectural life) to develop into the greatest and most stupendous expression in architecture and the allied arts the world has yet seen. The seed of this new movement (which has affected modern building throughout the civilized world and is an important factor in present-day designing) was sown in Austria some 28 years ago. Its influence first spread to Germany, then to Scandinavia, Holland, Finland, Servia, Belgium and France. My first acquaintance with this movement was in 1909. It was spoken of as the "New Tendency" or the "Stylafied Art." It was not to be confused with the "Art Nouveau" that was prevalent in Europe about the same time. This latter was largely of Germanic origin, and perhaps was at first an effort to create a style of detail to match the new architecture. Yet it was to be classed likewise as a parallel style with the "New Tendency," though destined to perish, while the "New Tendency" has survived. It is of interest to emphasize at this point that in the best examples of expression in our new architecture we are uncertain as to the suitable ornamentation. There is danger of committing in the detailing an error that smacks somewhat of this very "Art Nouveau." The fault is due largely to the architect's having taken a step forward while his sculptors have lagged behind, unable to assimilate so quickly an understanding of the integral nature of these vertical masses of such rare force and beauty. I shall shortly point out a method that I am convinced is the road to a solution of the problem of detailing this new order, a really adequate solution.

While a student at the Beaux Arts, Brussels, in



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SHELTON HOTEL, NEW YORK
ARTHUR LOOMIS HARMON, ARCHITECT



"The Three Wise Men"
Sculptured by Leo Friedlander for a Chapel at Berkeley, Cal.

1908 and in 1909, I took a vacation trip to Berlin, although I was not interested in Germanic art in general at the time, due to having been educated by men who had been trained in the Beaux Arts. It was as normal for the American student in sculpture to develop a strong predilection for French art as it was to enjoy his native meal. At that time our buildings were chiefly designed in the Renaissance or French manner, and from this influence we derived a great deal, both in knowledge and assurance of its soundness of purpose. It was to be expected that on arriving in Berlin I carried this viewpoint with me. I found, however, in spite of my feelings in the matter, that I was impressed, to say the least, with the very different kind of architecture the Germans were doing. The Rhinegold Cafe was admirable; likewise the Wertheim department store's new wing. These examples, though a bit heavy, were well put together and, notwithstanding their rather futuristic inclination, indicated a valid understanding of past performances, especially of Greek and Egyptian architecture. It seemed as though every new development, whether apartment house, theater, monument or commercial building that invaded the town was a conscript to the new movement. And how they stood out among the old Baroque palaces, *"Sieges Alleys,"* etc.! I vividly recall having made the acquaintance of a group of native artists, and over steins of German beer we discussed the new movement pro and con. The introduction of the beer here is of interest, since the free indulgence in this draught may in no small degree be responsible for the heavy feeling that is offensive to us in much of German art. Nevertheless, Germany has contributed in no small measure in the last 15 years to the progress of architecture. Her influence is important.

After visiting a number of the important cities of central Europe, I returned to the Brussels academy, spending the ensuing year there. At the *Ecole* I began to show the influence of my travels more definitely than was anticipated. Our atelier was shortly joined by three Hungarian sculptors who had just come from Munich. They were very much "pro" the new movement, and together we worked most engagingly. It will be interesting to say here that the class at Brussels wherein we worked was called *"Cours Decoratif."* In addition to the customary life-class work, each student was allotted several yards of wall space in the classroom for composition studies. Each composition was a given problem, prescribed weekly by the professor, such as a facade to an opera house, library or public building. It was required of the pupils to model the entire facades in clay at a very comprehensible scale. We were given ample leeway to execute our conceptions in any self-chosen style, this affording the "New Architecture" men a chance to show their wares, and it was indeed interesting work that that part of our class produced. This experience laid the foundation of my idea, which is that to create satisfactory detail for the new style the sculptors must grow to *feel* the nature and structural lines and masses of the new movement in architecture. Only thus can adequate detail be created.

I am disposed to say from personal observation of European art from 1908 until the breaking out of the World War that although France and the Central States were politically at variance, artistically, strange to say, they were on the threshold of a *rapprochement*. This time, however, the pendulum has swung from east to west. Why not? The great architectural order, Gothic, found itself in the remotest towns of France, and its mark of distinction is upon the new architecture of today. A recent instance may be found in the new Telephone Building in New York. Though the detail is far removed from anything Gothic, the tower has a strong Gothic flavor. Yet this strikingly remarkable monument to commercialism is categorically of the new order.

And so it was that in many countries in the past, though the form language of "Gothic" was in vogue (and styles traveled and lasted longer than in our present day), the same vogue-like desire existed with the architects in all lands to substitute for an old and worn habit something new and different. Gothic also took on a varied character (at its height) in every land that succumbed to its charms. This perfectly humane characteristic affected likewise other worthy styles that preceded and followed the Gothic. There are English, German, and Spanish examples that rank along with the French among the *chef d'œuvres* in architectural history; yet each bears the stamp of national origin as well as the Gothic imprint. As late as the early part of this century we built our own St. Thomas' Church on Fifth Avenue.

where sound expression found itself again with Gothic as the medium, appropriate to the religious and practical requirements of our day. It is in this temple of worship as well as in many other modern church buildings that the Gothic language of form has again asserted itself, rising to new and exceptional heights in a marvelously beautiful expression.

To this day we pioneers of the new movement who are earnestly striving to bring out the best of which we are capable are classed among the so-called "cubists" and "faddists" of today. Strange to say that among the best artistic products of ancient Greece and Egypt, and in the frescoes of Chello and Pierro of the Italian Renaissance, we find the work of the real, genuine cubists. Their knowledge was the result of a profound study and understanding of geometrical shapes in relativity to an extent that would put the sensational, self-styled cubist of today to shame,—provided he had any left. If Pierro could be reincarnated he would look upon the aforementioned group of mountebanks as a vicious circle of filibusterers, attempting to place themselves in a class of serious-minded men anxious to apply their real knowledge in keeping up with the new development and virtues of sound cubism; for here is where we of the genuine group fundamentally belong. As a people we have one thing to our credit in no small measure,—when an influence takes hold of us, it is carried to an unforeseen height and perfection in a comparatively brief space of time. Our brethren are already in the field and have sown the seed which has taken healthy root in our soil, and several splendid examples of the sky-scraper in this style are the fruits. This cubist type of building, which has developed in the crowded sections of Manhattan, more than lends itself to further development. It is logical to assume that our land is the place where opportunity is unrestrained by limit or historic precedent, and where the real character and sound application of a new style are to be successfully developed.

For a long time we have designed our buildings on paper, but the frequent use of a model is now recognized as being highly advantageous. It was perfectly proper 20 years ago to approach the designing of our Renaissance structures in the old way. But the "New Architecture" is going to reverse the procedure until the time comes when we are as familiar with the new as we are with the older essential fundamental principles. I venture to predict that the problem "en masse" will become one decidedly sculptural, and as a starting point the important thing insuring a good design in the new style will lie in the silhouettes. To familiarize ourselves thoroughly with this new problem, a small scale model of the building will be a pre-requisite, the design of which after much study will be translated to paper as a second consideration,—not a cardboard model, probably, but a model designed at a fair scale in pliable clay or wax.

In order to go forward we sometimes must look back. We find at the bottom rung of the ladder a development that culminated in the great Egyptian



Symbolic War Memorial
Leo Friedlander, Sculptor and Architect

era. It is with the work of this period that the present-day new style has so much in common, that is to say that the Greeks who developed the finest type of temple were influenced in their earlier building by the architecture of Egypt. In a like manner we are today searching for a source of material to further develop this new, big child of ours, because never before has the world, for practical or economic reasons, been confronted with the need of a sky-scraper. Since Egyptian art culminated in the ultimate product of a super-temple (in Greece), we can safely say that we are in pretty much the same boat. We have given birth to a new style of architecture, sky-scrapers, and are proceeding to develop them. The requirements of each age supply the means of satisfying them, whether there be precedent or not. The highest civilizations of the past found their ultimate expressions in temples and cathedrals. Today the building of temples has become a secondary matter, and temples are being supplanted in all our large cities by sky-scrapers, towering far above our houses of worship. So, generally speaking, barring a certain lighthouse that we are told once shone as a beacon in the Alexandrian age for Mediterranean ships and of which there is no material trace left, or the hanging gardens of Babylon (for data on which we are obliged to rely upon our good friends, the archæologists), there is no precedent in all antiquity for the type of building of the sky-scraper species we have come to erect by scores all over old Manhattan Island. The idea of stacking up one temple upon another has frequently been carried out, but it does not satisfactorily solve the problem. Nor does the

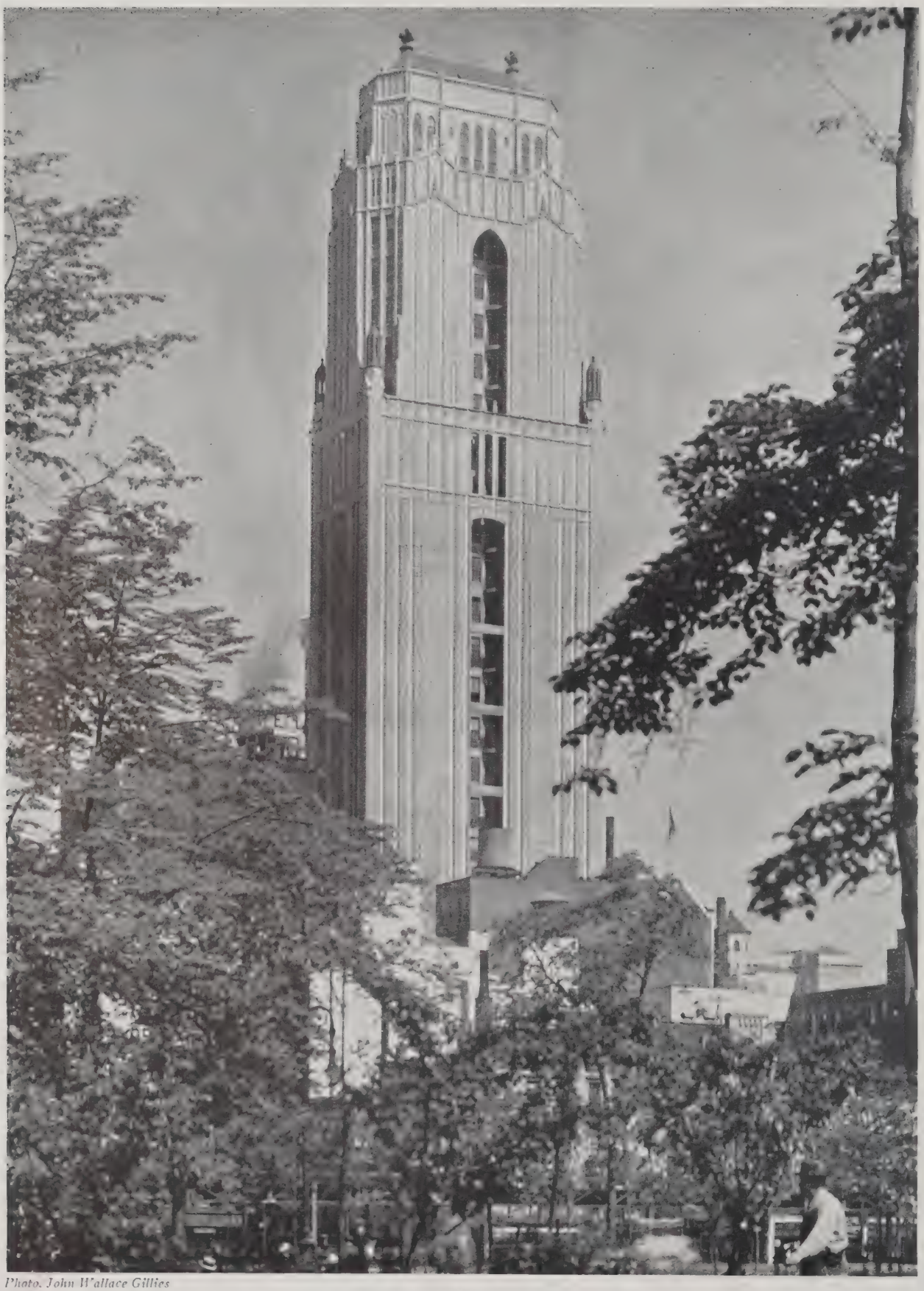


Photo. John Wallace Gillies

BUSH TERMINAL BUILDING, NEW YORK

HELMLE & CORBETT, ARCHITECTS



Photo. Trowbridge

TRIBUNE TOWER, CHICAGO

JOHN MEAD HOWELLS AND RAYMOND M. HOOD, ARCHITECTS

Babylonian style do full justice to the new type,—the "setback" structure, though it does, perhaps, supply more material for thought than the other type. The recourse to Gothic does not fully justify the effort, though it has been resorted to. It will not live as long as its predecessor, Græco-Roman, because we are growing too rapidly today to believe in the necessary application of the old order of things in the solution of problems in architecture and building.

Although these ideas have frequently been most intelligently applied, they have failed to convince. They have merely been substitutes to serve until such a time as we shall find ourselves in possession of what is "essential," as we artists apply the word. Feeling, which we are now commencing to express in our architecture, is the thing of vital importance. It is a certain something quite apart from good taste and decidedly more dependent upon creative ability than anything else we can think of. It means a fresh application of the great store of knowledge of which we have always availed ourselves. It is a renewed use by us as architects of the direct and intimate association with antiquity which will best serve us in our new awakening, as manifested in our new buildings. With this new architecture we are developing a truly new renaissance, which will be on a more gigantic scale than was ever known before. All artisans, painters, sculptors and architects will develop an understanding of the principles of one anothers' arts and will work together more closely than we in America have ever done. More than ever will the architects develop a greater plastic knowledge, through the solving of their new problems, so that they may remain the "Master Sculptors" they should be. I venture to predict that the future organization of a successful architect will be a four-cornered affair, consisting of an architect, an engineer, a sculptor and a business man, each governing his own sphere.

There is one factor that has worried us, and that is in deciding just what sort of detail is in keeping with our new architecture. This more than justifies the architect's designing his buildings in clay in collaboration with his sculptor, thereby learning to work together practically as one mind. Up to the present time the decorations of our new buildings have been interesting but reminiscent of something akin to the "Art Nouveau" I spoke of heretofore. Some recent buildings in New York of the vertical type are exceedingly good looking affairs structurally or "en masse," but are considerably less successful in their decoration. This is largely due to the new structural style, and to the use of a more or less antiquated and ornate type of decoration derived from the middle ages or from classical sources. This prompts the thought that when we change somewhat fundamentally we must effect the change quite generally. In reality, the proper detailing of these buildings requires that our architects as a point of departure should avail themselves of the help of the few men open to progressive ideas, who really understand the character of this new movement. What we need is to develop real craftsmen as in older days, when artists were as conversant with architecture, painting and sculpture as they were with their own particular field of artistic endeavor. This quality, it seems to me, is as essential today as ever, for thoroughness in any field of art is absolutely requisite, whether we work in the Greek style or in Chinese or in Modern Art. This is an age of specialization, a complicated era, in which all kinds of new ideas and inferior inspirations appear in every form of art.

In conclusion, a word with regard to an old adage with which we are in some form or other familiar. Styles do not develop over night. There does not come suddenly Greek ascendance or the apex of Roman, Gothic and Heaven knows what else! It is quite true that the development of the early styles was slow. But as civilization progressed with the centuries and the means of travel from one country to another improved, new styles appeared and redeveloped into still newer expressions. The history of the Italian Renaissance, that period so remarkable in architecture for its rapid rise to its culminating point and its subsequent gradual decline into the Baroque, is of significant importance here. To a civilization that can utilize the unlimited data regarding much that has gone before it,—and that can travel in a month to the remotest parts of the earth, that can reach Egypt in 12 days, Europe in a week, that can avail itself of ideas both old and new, either by photograph or by actual examples, that can transport these examples to its very shores in the same comparatively short space of time it takes to visit them, when of old it took decades and more for an influence to circle the globe,—anything is today possible. It is, therefore, reasonable to say that nowadays a new style in architecture can acquire influence, take root and develop to worthy heights and then to have practically outlived itself within the short span of half a century. As modern developments progress at an ever-increasing speed, who will venture to say how long will be the lives of future tendencies in art and architecture? Be that as it may, we have started upon the road that will lead us to a freer expression in our architecture, with the rigid classical training we have so ardently and righteously adhered to in the past to serve us in our present effort to acquire new forms for old. Already we have such outstanding examples as the Bush Terminal Building, in a sense among the earliest departures, followed by the Shelton Hotel and the still more recent Telephone Building, all crowning architectural achievements, to say nothing of several excellent examples by Buchman & Kahn, and Starrett & Van Vleck, in each of which is evident the swift development of the "new style," buildings which are "monuments of necessity."

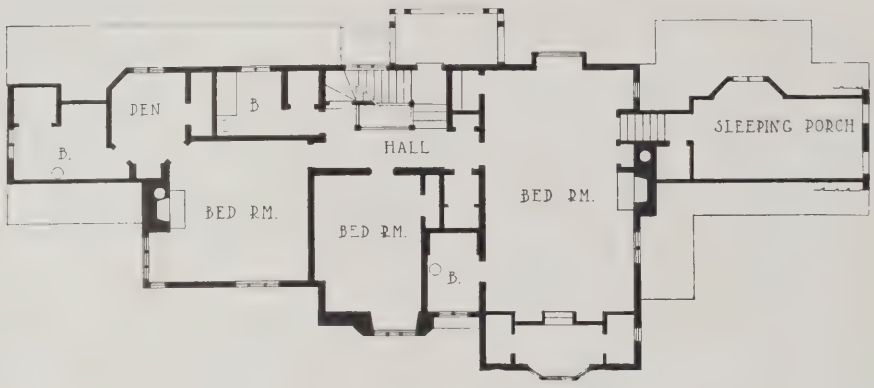


Plans on Back

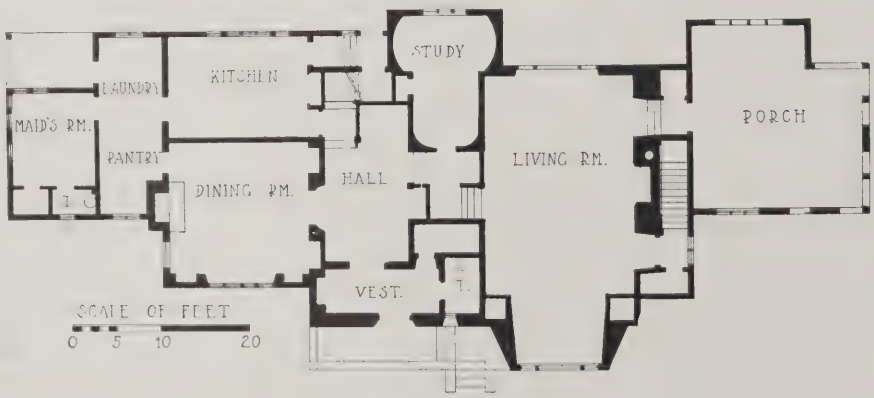
HOUSE OF C. T. SOUTHWICK, ESQ., GREAT NECK, N. Y.

ARTHUR W. COOTE, ARCHITECT

Photos. George H. Van Anda



SECOND FLOOR



FIRST FLOOR

PLANS, HOUSE OF C. T. SOUTHWICK, ESQ., GREAT NECK, N. Y.

ARTHUR W. COOTE, ARCHITECT



DETAIL OF ENTRANCE FRONT, HOUSE OF C. T. SOUTHWICK, ESQ., GREAT NECK, N. Y.
ARTHUR W. COOTE, ARCHITECT



GARAGE WING, HOUSE OF C. T. SOUTHWICK, ESQ., GREAT NECK, N. Y.
ARTHUR W. COOTE, ARCHITECT

ONE SIDE OF LIVING ROOM

HALL AND STAIRWAY

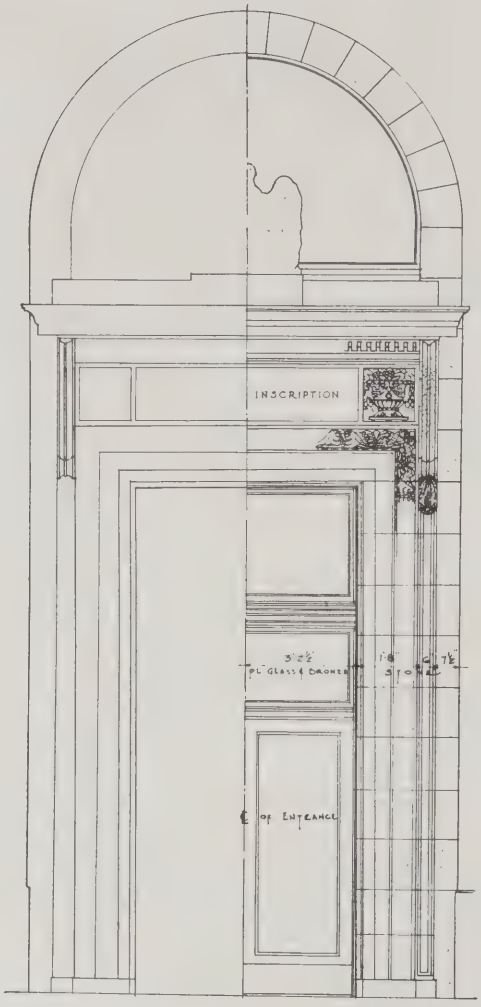
INTERIORS, HOUSE OF C. T. SOUTHWICK, ESQ., GREAT NECK, N. Y.
ARTHUR W. COOTE, ARCHITECT



Photo. Henry Fuermann & Sons *Measured Drawing on Back*

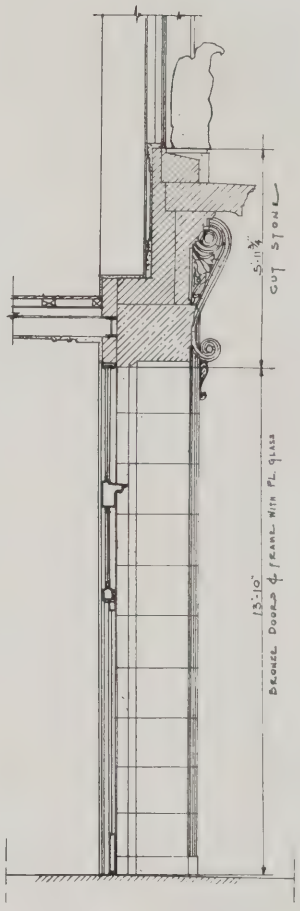
DOORWAY, NATIONAL MANUFACTURERS' BANK, NEENAH, WIS.

CHILDS & SMITH, ARCHITECTS

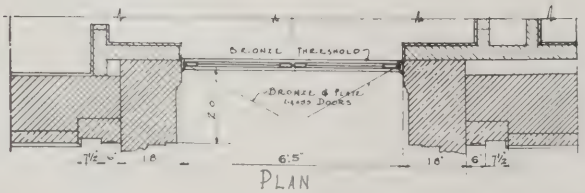


ELEVATION

NOTE SEE PLASTER MODELS FOR ALL CUT STONE WORK



SECTION



PLAN

MAIN ENTRANCE DOORWAY
NATIONAL MANUFACTURERS BANK
NEENAH WISCONSIN

JAN 1927

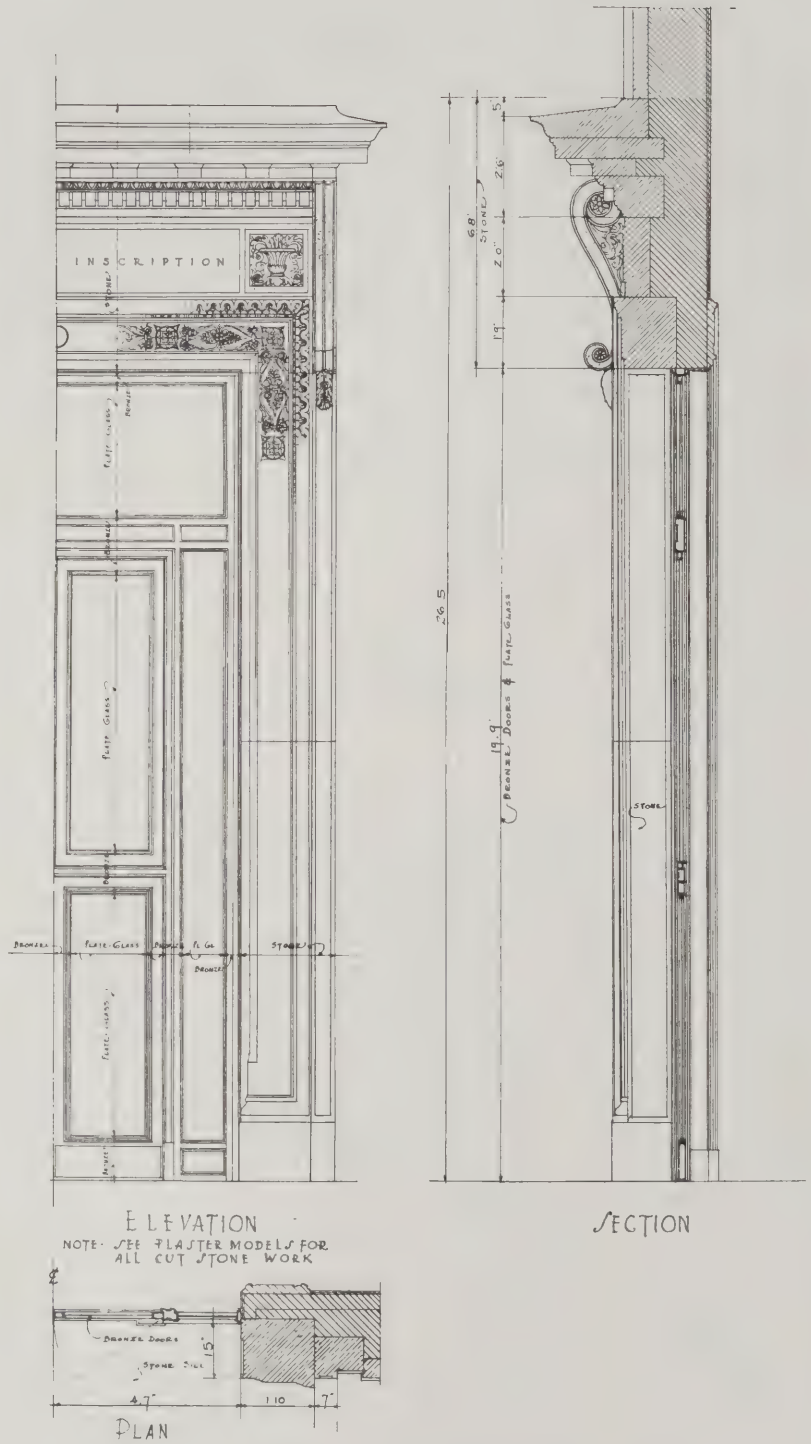
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The Architectural Forum Details



Measured Drawing on Back

DOORWAY, FIRST NATIONAL BANK, WISCONSIN RAPIDS, WIS.
CHILDS & SMITH, ARCHITECTS



ELEVATION

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SECTION

PLAN

MAIN ENTRANCE DOORWAY
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WISCONSIN RAPIDS WISCONSIN

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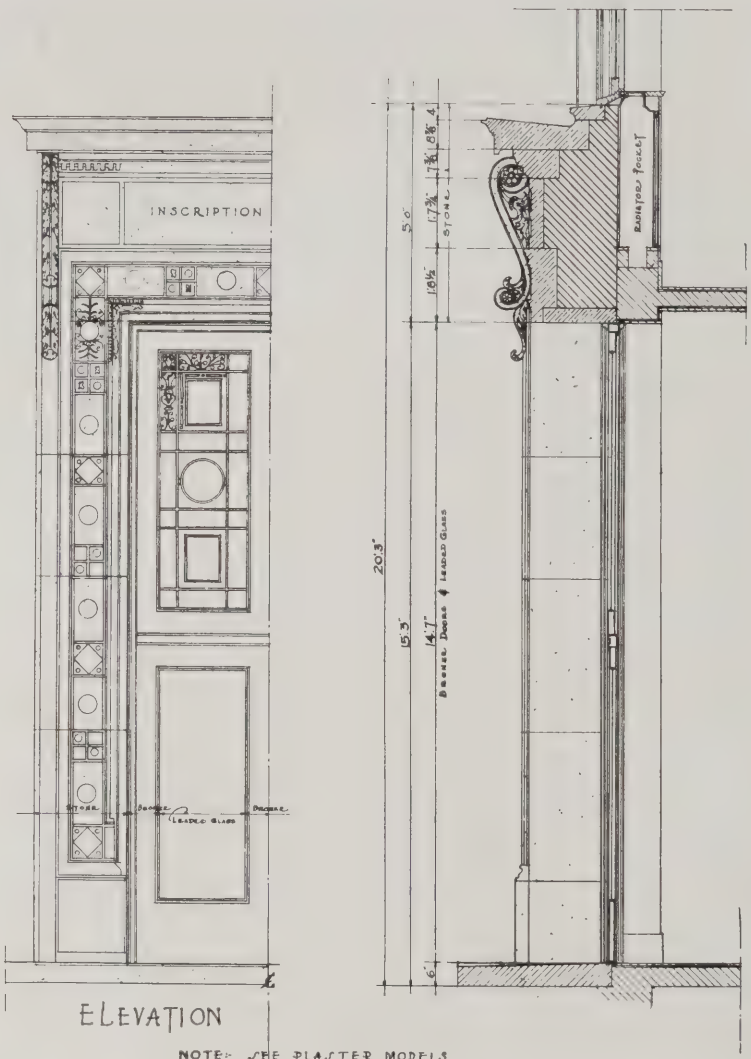
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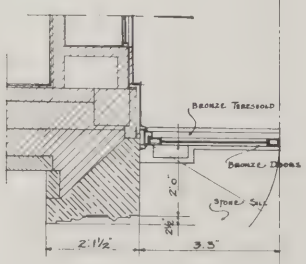
DOORWAY, NORTHERN STATES LIFE INSURANCE CO. BUILDING, HAMMOND, IND.

CHILDS & SMITH, ARCHITECTS



ELEVATION

NOTE:- SEE PLASTER MODELS FOR ALL CARVING



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MAIN ENTRANCE DOORWAY
NORTHERN STATES LIFE INSURANCE CO. BLDG.
HAMMOND INDIANA

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JAN 1927

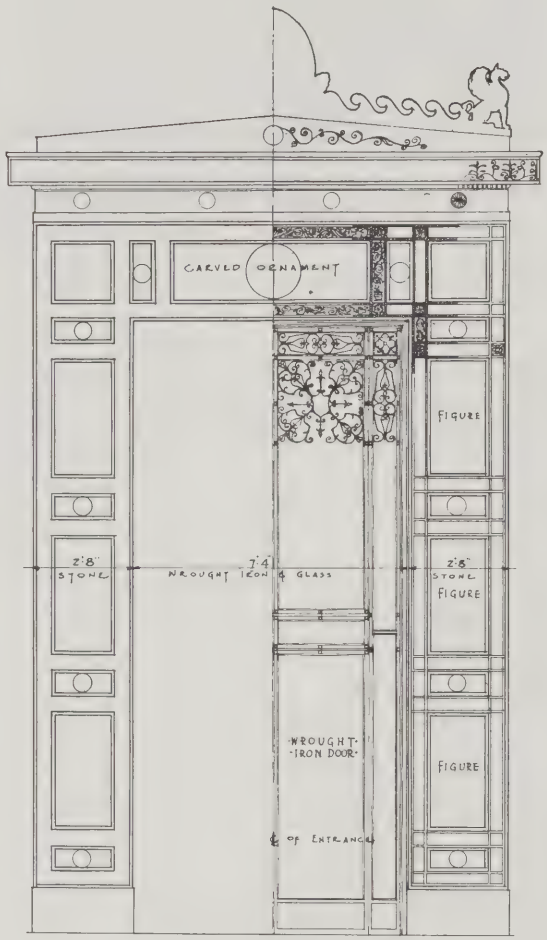
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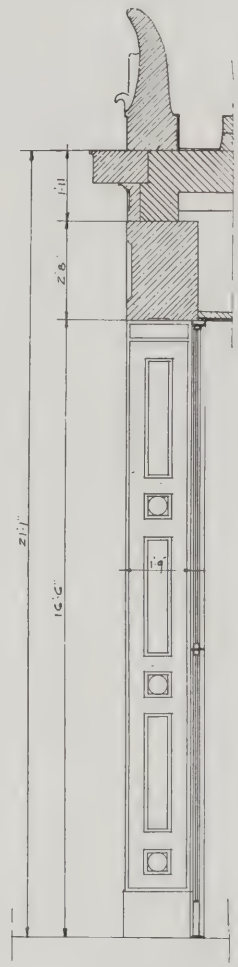
Photo. Henry Fuermann & Sons *Measured Drawing on Back*

DOORWAY, HARDWARE MUTUAL INSURANCE BUILDING, STEVENS POINT, WIS.

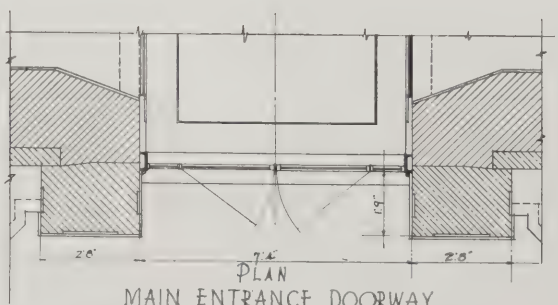
CHILDS & SMITH, ARCHITECTS



ELEVATION
NOTE · SEE PLASTER MODELS FOR ALL CUT STONE WORK



SECTION



PLAN

MAIN ENTRANCE DOORWAY
HARDWARE MUTUAL INSURANCE BLDG.
STEVENS POINT · WISCONSIN

JAN 1927

NO 22

Some Recent Monumental Doorways

By WILLIAM J. SMITH

TO the main doorway of a building there attaches an importance which is two-fold. As an actual utility it supplies means of entrance and egress to and from the structure, while as a detail of design it supplies the focus or center upon which there is likely to be lavished the utmost in ornament which the building possesses. The Egyptians, Greeks and Romans made the doorway the culminating point of their decoration and design, and in Renaissance times, particularly in Italy and Spain, architects did the same. Warmth, profusion of decoration, charm of light and shade, skill in the crafts in bronze, wrought iron, faience, wood carving, and in the expression of symbolism,—all combined most successfully in developing the glorious doors of the Renaissance, many of which are still in existence.

The doorways illustrated in these pages are selected from a number showing Classical and Renaissance influence with an occasional suggestion of motifs from other sources. The entrance to the First National Bank of Davenport, Ia., furnished an opportunity for employing excellent craftsmanship. The composition for the bronze entrance in the two-story door opening was first studied at 1-inch scale in clay by the architects in collaboration with the sculptor. The sketch was then raised to 3-inch scale and then to full size, and finally the scale drawings were made by draftsmen from these models. The bronze craftsman figured from the model itself and executed all of his work from the full-sized models. Much of the inspiration for the design of this bronze door came from the design of an old *reja* or screen of forged iron in a Spanish cathedral. The group figures over the metal lintel of the doorway proper symbolize "Coining" and "Assaying," and they crown the general decorative motif in the same way that the figures crown the *reja* of the Royal Chapel at Granada. The main part of the entrance composition is surrounded by a frame of bronze arabesques, vase forms and Greek coins. The reveal and soffit of the door surrounding the bronzework are richly decorated by bas-reliefs in niches, four on each side; these figures represent "Construction," "Labor," "Agriculture," etc. Over the arched door architrave and flanking the keystone are fine figures in bas-relief emblematic of "Commerce" and "Banking." The extreme care in designing the decoration is shown in such details as the design of the keystone itself. As a foil to all of the richness of this scheme of decoration and emblems, the transom opening over the doorway, and the entrance doors opening directly below are of plain glass, being tied into the general design only by mullions. Probably Amadeo's beautiful sculptured examples in the Certosa of Pavia influenced the architects most during the development of this entrance design, if any particular example were in mind.

The monumental door of the State Bank & Trust Company of Evanston, the opening of which rises 38 feet to the under side of the arch, possesses a feeling of ancient Rome in the carving, with a corresponding touch of quality and richness in the beautiful wrought iron door grille which suggests more than a little the wrought iron grilles of the chapels of the Italian Renaissance. The entrance to the Security Bank of Chicago, the entrance to the First National Bank of Wisconsin Rapids, Wis., the entrance to the First National Bank of Neenah, Wis., and the entrance to the National Manufacturers' Bank of Neenah, Wis., are all dignified in proportions and carefully studied in scale.



Gateway, Temple of Khons, Karnak

One might expect a very large door to dwarf a building, but the very opposite effect occurs when the door is in proportion and does not look "colossal." On the contrary, it seems to add nobility and dignity to the whole composition. Note the doorways to the Erechtheion, the Pantheon and to similar structures, but note also that as these doors are larger, they are often much higher in proportion to their widths. The Vignola door rule is that the height be twice the width,—but the gateway to the Temple of Khons at Karnak, Thebes, is

almost three times as high as its width at the top, and it tapers at the base to a width greater by one-sixth of the top width. Again, the 30-foot door of the temple at Ancyre is fully three times its width at the top of the opening and is well proportioned and very majestic. Such rules are indeed to be departed from wisely, and often are, with benefit to architecture.

The main entrance to the Hardware Mutual Insurance Building at Stevens Point, Wis., is a combination of extreme delicacy and great strength, and of simplicity as well as richness in its composition and decoration. Its design was suggested by the Gateway of Khons. It should be noted that, like the jamb and lintel of Khons, it has no mouldings and is the result of collaboration between the sculptor, the modeler, and the architects. By symbolism such as is given by the griffin and the figures in the niches, in the jamb and in the lintel, symbolic suggestions of strength, security, insurance, commerce, etc., are made and add greatly to the success of the doorway's design, besides making it appropriate to its place.

Similar to the Davenport door, the entrance to the



Doorway, State Bank & Trust Co., Evanston, Ill.
Childs & Smith, Architects



Entrance, First National Bank, Neenah, Wis.
Childs & Smith, Architects

Hardware Mutual Insurance Co. Building, which was just mentioned, represents an evolution from plaster studies. In developing this doorway, it was difficult but very important to secure the charm of flat decoration in the finished carving. This low relief forms the lowest "value" in the sculptural scheme; the signs of the zodiac in the small discs between the niches form the second "value"; and the color of the niches forms the third and highest "value." The stone frame of the door was designed particularly to receive the delightful wrought iron of the grille which protects the entrance. This wrought iron grille opening consists of a border and a central motif composed of 12 decorative square grilles. At the center of each square there is a brass escutcheon. Each of the 12 escutcheons so composed symbolizes one of the hardware guilds of the middle ages. One should see this rare example of craftsmanship in wrought iron to properly appreciate it. From the step to the high point of the antefix over the door is 25 feet. While this indicates an entrance of unusual dimensions, the scale of the door is very satisfactory, and it does not



One of Four Leaded Glass Panels,
Northern States Life Insurance Co. Building



Detail of Doorway
Hardware Mutual Insurance Co. Building

look "over-size" in relation to the rest of the building.

Of unusual architectural and decorative character is the doorway shown on Plate 7, one section of which is also illustrated on page 27, with leaded glass in the four simple rectangular openings, the appropriation not having been sufficient to cover a bronze or wrought iron grille of the Davenport or the Hardware Mutual type. This leaded glass work is exceedingly decorative and appropriate. In the 12 squares formed by these motifs, three in each section, are compositions emblematic of the arts, sciences and industries. There has been no attempt in this leaded glass work to imitate any other materials, such as wrought iron or bronze; the leaded work tells its own story. Much of the feeling of light and shade, color, texture and craftsmanship, in addition to architectural composition, profiles and construction, is due to the collaborators in each of the instances noted here. As with the ancient examples, the most successful of these modern entrance doorways forms a focus about which is centered whatever richness of ornament the building possesses. Study of a notable example of whatever period will prove that the architect has devoted his utmost skill to the designing of the entrance, his care being given to the matter of scale as well as to the employment of ornament. In designing modern buildings, particularly those of great height, there are involved problems unknown to the architects of earlier days. These problems, of course, relate to scale, and their solution demands care.



Doorway, First National Bank, Davenport, Ia.
Childs & Smith, Architects

The Forum Studies of European Precedents

THE PALACE OF VERSAILLES

PART I



Palace of Versailles, From the Gardens

Editor's Note. This group of illustrations begins the continued publication of The Forum Studies of European Precedents. These unusual illustrations of well known subjects bring out their architectural beauty and picturesque charm. It is at the request of many of our readers that the publication of The Forum Studies of European Precedents will be continued throughout the year.

NO architectural episode has ever exercised a more profound effect upon building in the polite world than the erection of the Palace of Versailles. From one end of Europe to the other, the work going on at Versailles was talked of from the time that Louis XIV first determined to enlarge the old hunting lodge and make it the principal seat of his court, and it continued to be a source of universal interest and admiration through all its successive stages of progress till it was completed near the close of the king's long reign. The additions and changes that went on at Hampton Court echoed the spirit of what had already happened at Versailles and was still in progress there. But Hampton Court was not alone. In every continental capital, in every petty kingdom and principality keen eyes watched each stage in the growth of the French king's residence, and whenever there was any occasion or even any plausible excuse for new building, additions or alterations, the fashion set at Versailles was eagerly seized upon as a model of inspiration. The grand manner was proving infectious. And the influence of the grand manner lasted in full vigor for more than a century after the Sun King's death. As a matter of fact, the tradition has by no means ceased to work even yet.

The example of Versailles was reflected not only in the palatial aspects of contemporary and subsequent building it was also echoed a thousandfold in the residences of the nobility in France and in all the other countries that had come to acknowledge the leadership of France in matters of style. Lesser embodiments of the Versailles conception arose by the score wherever means made emulation possible. The creation of Versailles can be regarded in no other light than as an episode in architectural history. It was not a single, isolated incident; it was a gradual growth, a chain of evolutionary events. It began with the remodeling and enlargement of the hunting lodge built by Louis XIII, and it was not completed till many years later, when Louis had realized his dream of grandeur and had called into being not only the palace but also its gardens and park and its many dependencies. Louis XIV had a veritable passion, a consuming enthusiasm for building. The creation of splendor in his environment had a definite place in his governmental policy, but quite apart from this aspect of his interest he had a keenly developed architectural instinct, possessed exquisite taste, and was an acute and discriminating critic. The king has never been given full credit for his share in the designing of Versailles although, ignoring the personal element of royal taste in the field of design, the most grudging cannot fail to admit Louis' wisdom in employing the ablest architects and artists of his age, giving them every encouragement and facility.

Despite the many changes that have taken place at Versailles since the death of Louis XIV, the palace and its surroundings will always remain a monument to the discernment and creative mastery of the architects and artists brought together and liberally supported by the *Grand Monarque* in achieving a dream of unparalleled magnificence and grandeur.



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END FACADE OF THE PALACE OF VERSAILLES, FACING THE ORANGERY



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DETAIL; ONE OF THE PAVILIONS, PALACE OF VERSAILLES

The Forum Studies of European Precedents; Plate 51



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DETAIL; GARDEN FACADE, PALACE OF VERSAILLES



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APPROACH TO THE TERRACE, GARDEN FACADE, PALACE OF VERSAILLES

The Forum Studies of European Precedents; Plate 53



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DETAIL; VASE AND STAIRWAY PARAPET, PALACE OF VERSAILLES



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GARDEN STAIRWAY LEADING UP FROM ORANGERY, PALACE OF VERSAILLES



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DETAIL; VASES ALONG THE PATH TO THE LAGOON, GARDENS OF THE PALACE OF VERSAILLES

House of Mrs. Lucy Work Hewitt, Cornwall, N. Y.

WILLIAM HARMON BEERS, Architect

NOT only architects but the more observant portion of the general public must have noticed in recent years certain changes that have come over country house architecture in America, especially since the war period. The trend of country house design has been away from the very large house and toward the house of moderate size; and, as has frequently been the case in past ages, architecture has been directly and discernibly affected by sociological rather than by æsthetic factors. Certainly the assembling and retaining of the staff of capable servants required by a really large country house have so nearly approached the impossible as to influence a great many people against attempting the "grand manner" of the generation past. From this general change it is true that the design of the house of moderate size,—even that of the small house,—has greatly benefited. Clients of means and of the utmost good taste and discrimination have asked for smaller houses, and architects of the highest ability and standing have undertaken to design them. In any appraisal of the present marked improvement in the design of houses of lesser size, this sociological aspect of the change must be recognized and given its due weight as affecting current architectural practice.

In spite of the resulting advance in the standards of moderate and small house design, however, the writer feels that there are many who would join him in regretting the almost complete passing of a type that has been essentially American since the early days of Westover or the later days of Homewood and Monticello, through to such more recent large-scale expressions of the country house idea as Biltmore or Georgian Court. About even the more re-



House of Mrs. Lucy Work Hewitt, Cornwall, N. Y.
William Harmon Beers, Architect



Corner of Smoking Room, House of Mrs. Lucy Work Hewitt

cent of our large country places there still hangs some indefinable glamor of the old regime, some expression of a kind of life that seems, even now, to be irrevocably a thing of the past. And, because they are so new, we do not even know whether our new regime and our new standards are really better than those of our fathers and grandfathers. Those of us who stand with one foot in the formative present and one foot in the world as it was before the war, cannot help looking both ways and making comparisons, taking stock, so to speak, of past and present.

And for the reasons set forth, or at least suggested, in this brief prelude, a special interest attaches itself to the recently completed country house of Mrs. Lucy Work Hewitt, at Cornwall, N. Y., which is on the Hudson not far from Newburgh. William Harmon Beers is the architect, and he is to be commended for having designed a large house which is also dignified, and which takes its place with quiet assurance among the old "mansions" that line the Hudson for miles up from New York,—the country homes of the older prominent and powerful New York families, built when New York was young, before it had been invaded by people from everywhere.

Facing the river across a broad lawn, this house has all the appearance of a great estate of the Classic Revival era. The fine Doric portico, indeed, is a studious copy of the portico of a ruined Greek Revival house that stood on the site, and so convincing is the quality of reproduction in this portico that one



One End of Foyer, House of Mrs. Lucy Work Hewitt

would be likely, even on close examination, to suppose that the house was a skillful piece of reconstruction. This illusion is heightened by the buff-painted brick, the excellently characteristic chimneys, and the simple treatment of the stone terrace. In elevation the main mass of the house is flanked by low wings, symmetrical in weight and topped with that solid, paneled balustrade so often seen in buildings of the Classic Revival era. The fenestration, properly, is formal, and the division of window panes nicely scaled to the right effect. Here, certainly, is a facade that does no violence to the best tradition of the Greek Revival Hudson River country house at its best. The approach, by a long curved drive that forms a broad semi-circle in from the road, gives all the effect of an old estate laid out during the days when "standard-sized building lots" were unheard of.

Within the house no attempt has been made to follow the Classic Revival character, proving again (if further proof were needed) that one of the most marked traits of architecture in this country is its eclecticism, sometimes due to the architect, sometimes coming from the personal tastes and predilections of the client. The entrance hall is of that spacious Italian type which was often so effectively used by Stanford White, and one of his favorite devices. The floor is of a rare blue-black marble, the walls of limestone, with painted beamed ceiling above. The architect was fortunate in securing a famous bench from the Davanzati Palace as the principal piece of



End of Dining Room, House of Mrs. Lucy Work Hewitt



Stair End of Foyer, House of Mrs. Lucy Work Hewitt

furniture, and the medallion over the mantel is an authentic Della Robbia. Character, dignity and spaciousness are definitely achieved in this very important part of the house. In detailing the stairway that leads up from this hall, the architect frankly, and with the zeal of a true scholar, drew upon "that most excellent master, Baldassare Peruzzi" for both form and manner. The foyer hall carries through to the portico, which looks out over the river, and from the left of the hall opens the living room, which leads in turn into a large solarium. The dining room, opening from the right of the foyer, has an interior of unusual charm and interest, since it was designed as an architectural setting for its decoration. This consists mainly of painted parchment panels in blue and gold, taken from the Imperial Palace in Pekin at the time of the Boxer uprising. To best set off the decorative quality of these panels, the woodwork is done in elephant gray, and the choice of Chippendale furniture was fortunate and associated with that master's strong leaning toward the "Chinese taste." And another phase of the relationship of the *Chinoiserie* to an European style is found in the smoking room, where the French mantel and furniture afford contrast to walls of red lacquer and frieze of red Chinese silk which has been placed above it.

Pursuing the plan further, it is found that another large solarium opens from the dining room, and that beyond the dining room the right wing of the house contains the kitchen, scullery, pantry and bedrooms and sitting room for the servants. These rooms are disposed along the entrance front, leaving the garden or river front entirely undisturbed in its gracious symmetry. All the important interiors, it is significant to reflect, are in the spirit of that type of large country house that is in no small danger of dying out. And in the same spirit is the fine treatment of the river front, a really distinguished architectural expression of old time dignity and reserve. It is a gratifying thought that the architects, at least a few of them, are keeping up the standards of the American country house of more spacious times and perpetuating the old traditions of the "mansion" type.

Coming years may see the building of fewer large country houses, but we like to adhere to the belief that the few that are built are to be really fine,—the kind of houses that will, themselves, constitute a definite tradition, surviving as many years as Westover or some of the later country houses that were built in the days when country life really meant living in the country and in a day when American life was vastly different from what it is today or will be tomorrow.



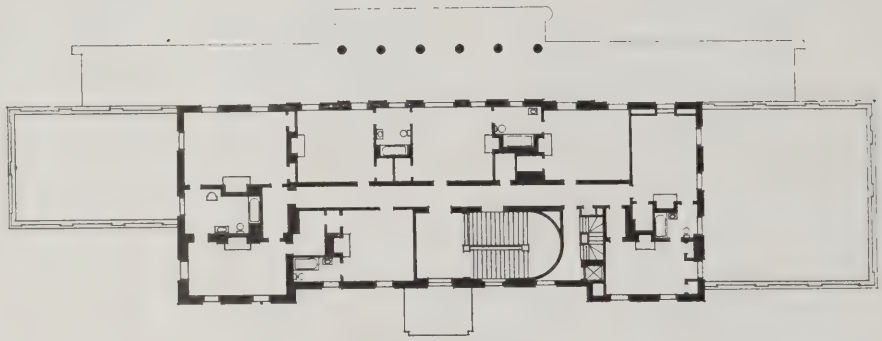
The Dining Room, House of Mrs. Lucy Work Hewitt



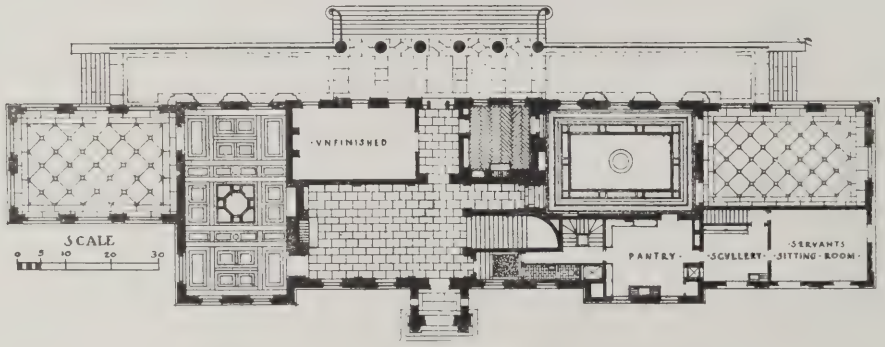
Photos. John Wallace Gillies *Plans on Back*

ENTRANCE FRONT, HOUSE OF MRS. LUCY WORK HEWITT, CORNWALL, N. Y.

WILLIAM HARMON BEERS, ARCHITECT



SECOND FLOOR



FIRST FLOOR

PLANS, HOUSE OF MRS. LUCY WORK HEWITT, CORNWALL, N. Y.

WILLIAM HARMON BEERS, ARCHITECT



Elevations on Back

RIVER FRONT, HOUSE OF MRS. LUCY WORK HEWITT, CORNWALL, N. Y.
WILLIAM HARMON BEERS, ARCHITECT



RIVER FRONT



ENTRANCE FRONT

ELEVATIONS, HOUSE OF MRS. LUCY WORK HEWITT, CORNWALL, N. Y.

WILLIAM HARMON BEERS, ARCHITECT



MAIN ENTRANCE, HOUSE OF MRS. LUCY WORK HEWITT, CORNWALL, N. Y.
WILLIAM HARMON BEERS, ARCHITECT

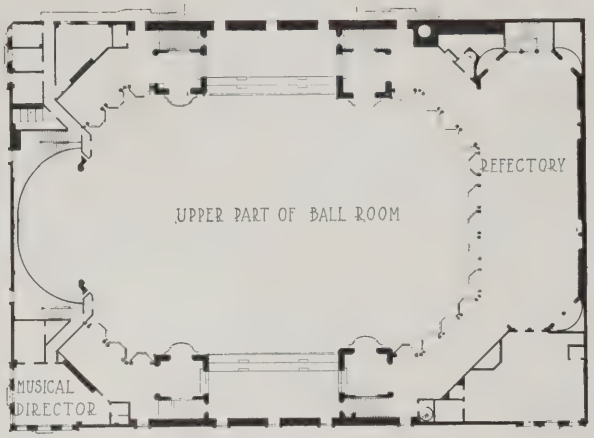


FIREPLACE, HOUSE OF MRS. LUCY WORK HEWITT, CORNWALL, N. Y.
WILLIAM HARMON BEERS, ARCHITECT

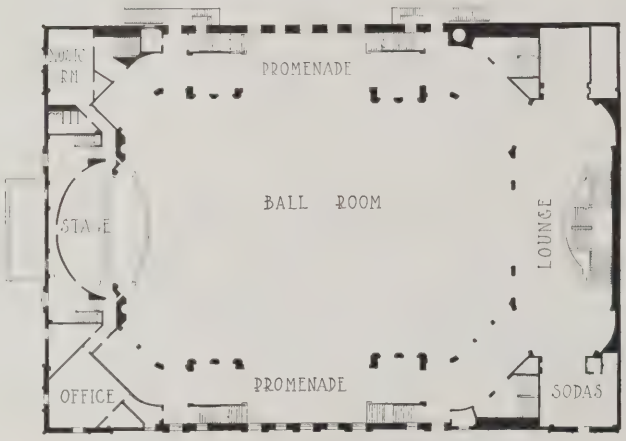


ARAGON BALLROOM, CHICAGO
HUSZAGH & HILL, ARCHITECTS

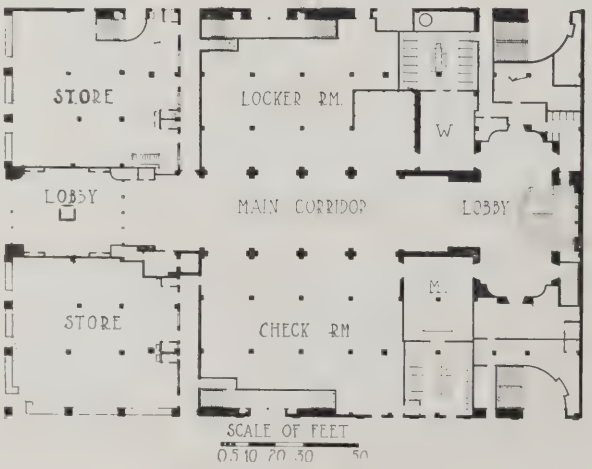
Photos, Trowbridge *Plans on Back*



MEZZANINE FLOOR



BALLROOM FLOOR



ENTRANCE FLOOR

PLANS, ARAGON BALLROOM, CHICAGO

HUSZAGH & HILL, ARCHITECTS



PROMENADE, FROM BALLROOM



DETAIL IN BALLROOM

ARAGON BALLROOM, CHICAGO

HUSZAGH & HILL, ARCHITECTS



BALLROOM LOUNGE



THE LOBBY

ARAGON BALLROOM, CHICAGO

HUSZAGH & HILL, ARCHITECTS



END OF MAIN LOUNGE



MAIN LOUNGE

ARAGON BALLROOM, CHICAGO

HUSZAGH & HILL, ARCHITECTS

The Common Brick House Competition

REPORT OF THE JURY OF AWARD

THIS rather unusual architectural competition was held for The Common Brick Manufacturers' Association of America. Instead of sketch plans, elevations and perspective drawings, photographs and plans of houses or bungalows already constructed were called for. The program required that the houses or bungalows submitted should have been constructed with exterior walls of common brick, and should not contain more than 70,000 cubic feet each. Judgment was rendered entirely on architectural merit, plan efficiency and ingenuity in the designing of common brick exteriors. All types of brick bond, course, texture or pattern, as well as painted common brick exteriors, were allowed. While the surfaces of the exterior walls had to be of common brick, any form of masonry structural backing was admissible, but brick veneer over wood construction was not acceptable. It was found that this fact limited the scope of the competition, as many of the best houses built in recent years are of brick veneer.

Photographs of a large number of interesting houses were submitted in this competition. After careful study of the photographs and plans of each house, the jury unanimously agreed that the prizes should be awarded as indicated here. Space here permits the publication of illustrations and plans of only seven of these houses, those which were awarded the first, second, third and fourth prizes and the first, second and third mentions. The program specifically stated that the quality or attractiveness of the photographs as such should not count with the jury in the determination of the prize winners. This fact necessitated the exercise of great care on the part of the jury, in order that it should not be influenced by the picturesqueness and charm which may often be produced by clever photographs and by good planting.

First Prize: Clarence S. Stein and Ernest A. Grunsfeld, Jr., New York. This well proportioned, homelike, brick house combines practically all of the features called for in the competition program as well as all the characteristics which the jury felt were necessary to a complete and satisfactory solution of the problem. The plan is well arranged, compact and convenient. The location of the entrance hall and kitchen at the front of the house makes possible the use of the rear or garden front for the principal rooms. The house is well proportioned. The unbroken sweep of the high pitched roof with its clapboarded gable ends gives strength and dignity to the design. The large outside chimney is appropriately and effectively located at a point at the end of the house, adjacent to the simple one-story porch.

Second Prize: David A. Ogilvie, Pasadena. In this instance, the photographs detracted from rather than added to the architectural charm and picturesque quality of this excellent house. The English cottage quality in this design is well expressed in the high pitched roof of agreeable slope, the white painted brickwork, the massing of elements, and the simple entrance bay with its recessed door. The exterior elevations clearly express the arrangement of the principal rooms, always important in good design.

Third Prize: John C. Topnick, Pittsburgh. Greater simplicity in both elevation and plan could hardly be imagined. The success of this sturdy little house is due largely to three elements,—the proportions of the house as a whole; the relation between the carefully scaled small windows and the wall spaces they occupy; and the height and slope of the roof with its massive center chimney. Such individuality and charm as are expressed in a rectangular, box-like house of this simple, old fashioned type depend upon the skill and ingenuity of the designer.

Fourth Prize: Russell S. Walcott, Chicago. This brick house has a certain distinction and character which recall the farm houses and smaller chateaux of France. The white painted brick of the high first story is pleasantly dominated by the slate-covered roof.

First Mention: Laurence M. Loeb, New Rochelle, N. Y. Here is a distinctly modern American country house of average size in which the important details have been carried out after Colonial precedent. The large mullioned windows on each side of the front door and the casement windows of the second story give a distinctly English character to the design, emphasized by the omission of blinds or shutters.

Second Mention: Charles H. Way, Boston. Here is another good example of the adaptation of English Georgian detail to the requirements of an American country house design. Variation from the center-hall, balanced plan adds interest to the interior arrangement of the house. The windows are well proportioned and excellently spaced, the Colonial detail is refined and reserved in character, and the brickwork is pleasing in its texture and consistent simplicity. The tall end chimneys happily balance the entire design, in which a decided homelike quality has been achieved through simplicity and good scale.

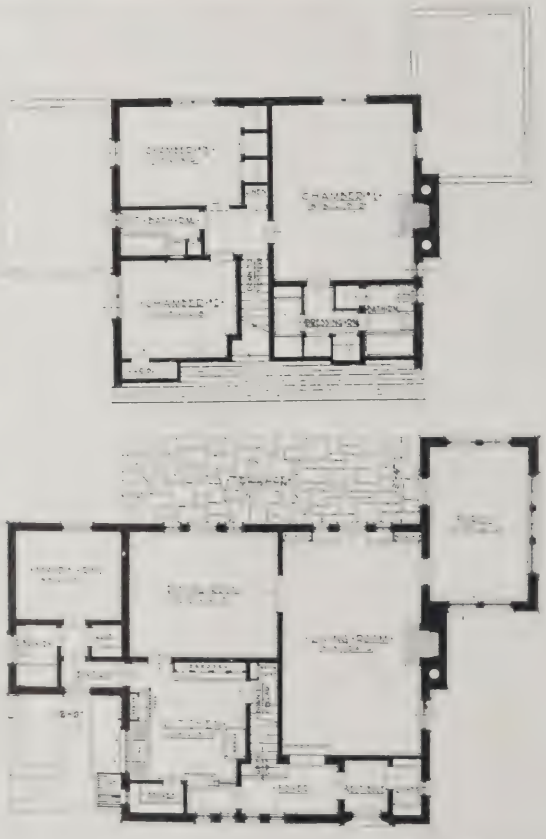
Third Mention: Dwight James Baum, Riverdale-on-Hudson, N. Y. Georgian traditions are again expressed in the character of the brickwork and the details of this house. The windows are carefully proportioned and successfully spaced in relation to the wall surfaces, and the effect of the design as a whole is much heightened by the manner in which the second story windows break through the cornice line. There is a cheerful, domestic quality about this design.

Jury of Award: Alexander B. Trowbridge; Aymar Embury II; James W. O'Connor.

Additional Honorable Mentions were awarded to Frank J. Forster, New York; Frazier, Blouke & Hubbard, Chicago, (2); Laurence M. Loeb, New Rochelle, N. Y.; Gordon D. White, Denver; Arthur B. Gallion, St. Louis; Dwight James Baum, New York.







FIRST PRIZE. AWARDED TO CLARENCE S. STEIN AND ERNEST A. GRUNSFELD, JR., ARCHITECTS, NEW YORK

House of Paul A. Rie, Port Washington, N. Y.







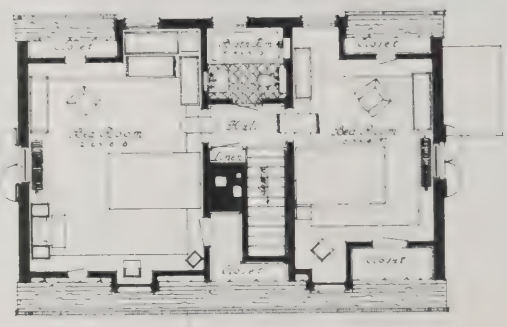


SECOND PRIZE, AWARDED TO DAVID A. OGILVIE, ARCHITECT, PASADENA

House of J. H. Kelleher, Esq., Pasadena









THIRD PRIZE, AWARDED TO JOHN C. TOPNICK, ARCHITECT, PITTSBURGH

House of John C. Topnick, Esq., Pittsburgh





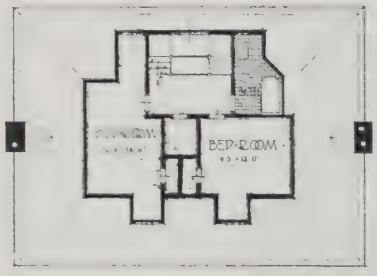


FOURTH PRIZE, AWARDED TO RUSSELL S. WALCOTT, ARCHITECT, CHICAGO
House of Donald B. Douglas, Esq., Winnetka, Ill.

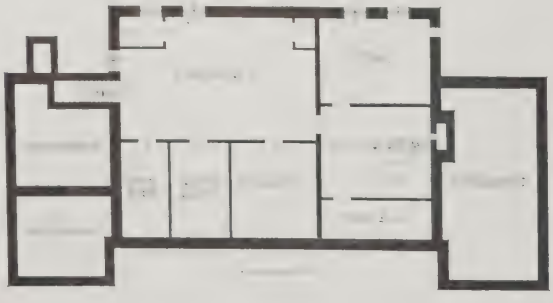




SECOND FLOOR PLAN



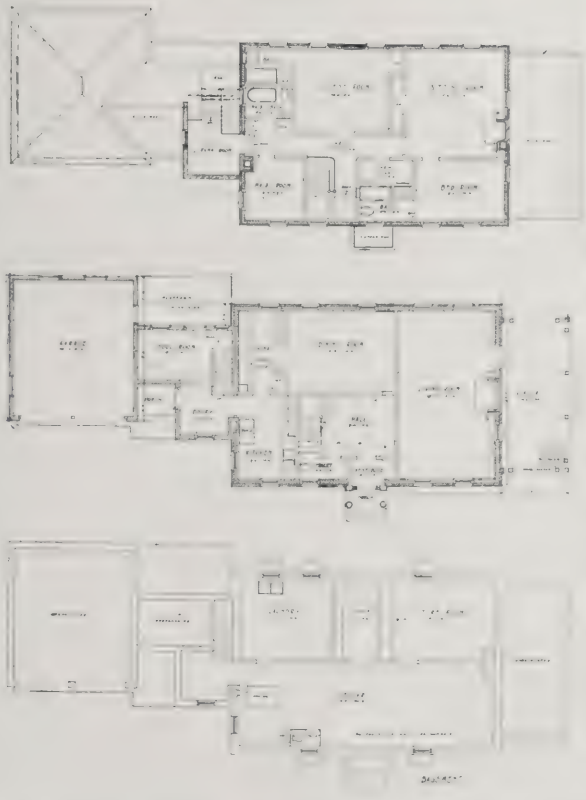
ATTIC-PLAN





FIRST MENTION, AWARDED TO LAURENCE M. LOEB, ARCHITECT, NEW ROCHELLE, N. Y.
House of Louis Jaskow, Esq., New Rochelle, N. Y.



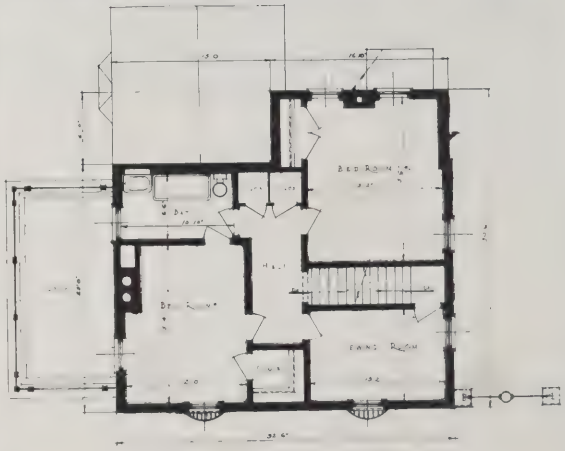


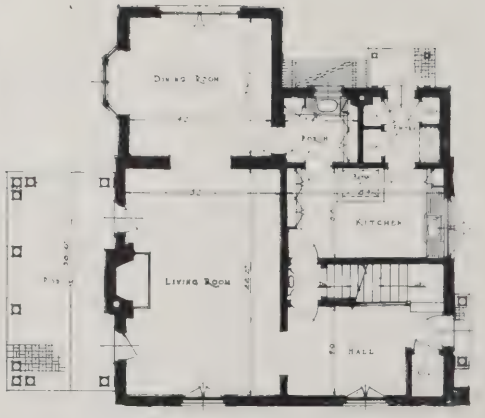


SECOND MENTION, AWARDED TO CHARLES H. WAY, ARCHITECT, BOSTON
House of Miss Georgia H. Emery, Brookline, Mass.









THIRD MENTION, AWARDED TO DWIGHT JAMES BAUM, ARCHITECT, NEW YORK

House of Mrs. Fayette Baum, Riverdale-on-Hudson, N. Y.

THE ARCHITECTS' FORUM

EDITOR'S NOTE. This editorial by Aymar Embury II, entitled "Criticism and Ethics," is the first of the opinions on matters of current interest to architects which it is intended to publish upon this page from month to month. The Architects' Forum represents a new department, in which will appear contributions from Harvey Wiley Corbett, Aymar Embury II, C. Stanley Taylor and Alexander B. Trowbridge, all of New York; Charles G. Loring of Boston, and Rexford Newcomb of the University of Illinois. The Architects' Forum also invites comment on matters of timely importance to the profession.

IN *The New Yorker* for October 16, 1926 there appeared an article entitled "The Sky Line," from which this paragraph is quoted: "Apparently, in many building operations, the cost of construction leaves nothing over for the design. This is particularly noticeable at present in our midtown section, the area of taste and luxury, in which the hotels, by and large, maintain a high architectural standard. But some of the new office buildings are terrible. If you like being harrowed, stroll about the neighborhood of Grand Central and give a look. . . . Another disappointment on proud Fifth Avenue, at Forty-fourth Street, is the Delmonico Building, for the design of which H. Craig Severance claims responsibility in letters which cause older members of the profession, wending their way luncheonward to the Century Club, to burst into tears. They do not look at the building itself. They can't. Every proportion appears to be unfortunate. The central tower, curiously set on no particular axis, has the grace of an overgrown grain elevator. Of the detail, one of the profession said, "Isn't it curious how a simple element like a band course or a moulding can produce a feeling of nausea? . . .

The architect of the Delmonico Building at once began a suit for libel against *The New Yorker,* claiming the sum of $500,000 damages. It is not the intention to discuss here the merits or demerits of the Delmonico Building. The opinion of the writer of this note is, after all, only the opinion of one man, and there is an old Latin saying: *"De gustibus non est disputandum,"* but it is rather to consider the broad principles of propriety involved in the action taken by Mr. Severance. It has never been the habit of professional people in the arts to use the courts to punish unfavorable criticism, and for a parallel case we have to go back many years to Whistler's suit against Ruskin. The artist is rather supposed to be above this sort of reprisal, and whether this supposition is entirely proper or not is the root of the matter to be considered here.

There would seem to be two entirely divergent lines of thought. One can see how such harsh criticism as that of *The New Yorker* may very well put Mr. Severance into the unhappy position of losing prospective business, and that on these grounds he may have a just claim for damages. On the other hand, for many years it has been the desire of the architectural profession to have the name of the author associated with every building, hoping thereby that the public might be educated to the importance of the architect's services. Assuming this attitude to be correct, one cannot expect that criticism will always be favorable; and in fact, were this the case, the aim of such association of authorship with executed work would be defeated, since all buildings having been spoken of agreeably in the public prints, no just measure of value could be arrived at by the public. The object of association would be lost.

The position of the architect is in certain ways rather curious. He is not exactly an artist, nor is he primarily considered a business man, and the apparent rule under which criticism is considered justifiable in the world of art is quite different from that which obtains in other professional practice. For example, when Heywood Broun was the dramatic critic for *The New York Tribune,* in one of his criticisms he said that a certain "Mr. Jones" was the worst actor he had ever seen on the stage. Mr. Jones sued *The Tribune* and Broun for libel. About the time the case was to come to trial, another play in which Mr. Jones was to appear was announced. The attorney for *The Tribune* called up Broun and asked him to lay off Jones, since further adverse criticism might be used as evidence of personal animus. Mr. Broun therefore wisely contented himself in his criticisms by saying that "the part of the butler was played by Mr. Jones; he was not up to his usual form." No personal animus was shown, and as a consequence, Mr. Jones lost his case.

An entirely different matter is that of a man who says to his friend or in the public print that a certain doctor is guilty of malpractice. Such a statement is highly actionable, and to avoid the consequences, the man making it must prove that the doctor actually is guilty of malpractice. A certain analogy might be drawn from these two cases, one as regards the artistic merits of Mr. Severance's design for the Delmonico Building, the other as to its structural qualities. If the writer of "The Sky Line" had said that the design of the Delmonico Building was unsafe, a clear-cut issue would have been raised. Mr. Severance would be able to prove definitely that his building is safe, or if not, no possible claim for damage would be sustained. But where the criticism is of the artistic merit of Mr. Severance's design, the matter seems to be upon a different footing. This is a matter of opinion and not of fact, and to the writer at least, however mortifying such a criticism may be, it does not seem an appropriate ground for action unless it was

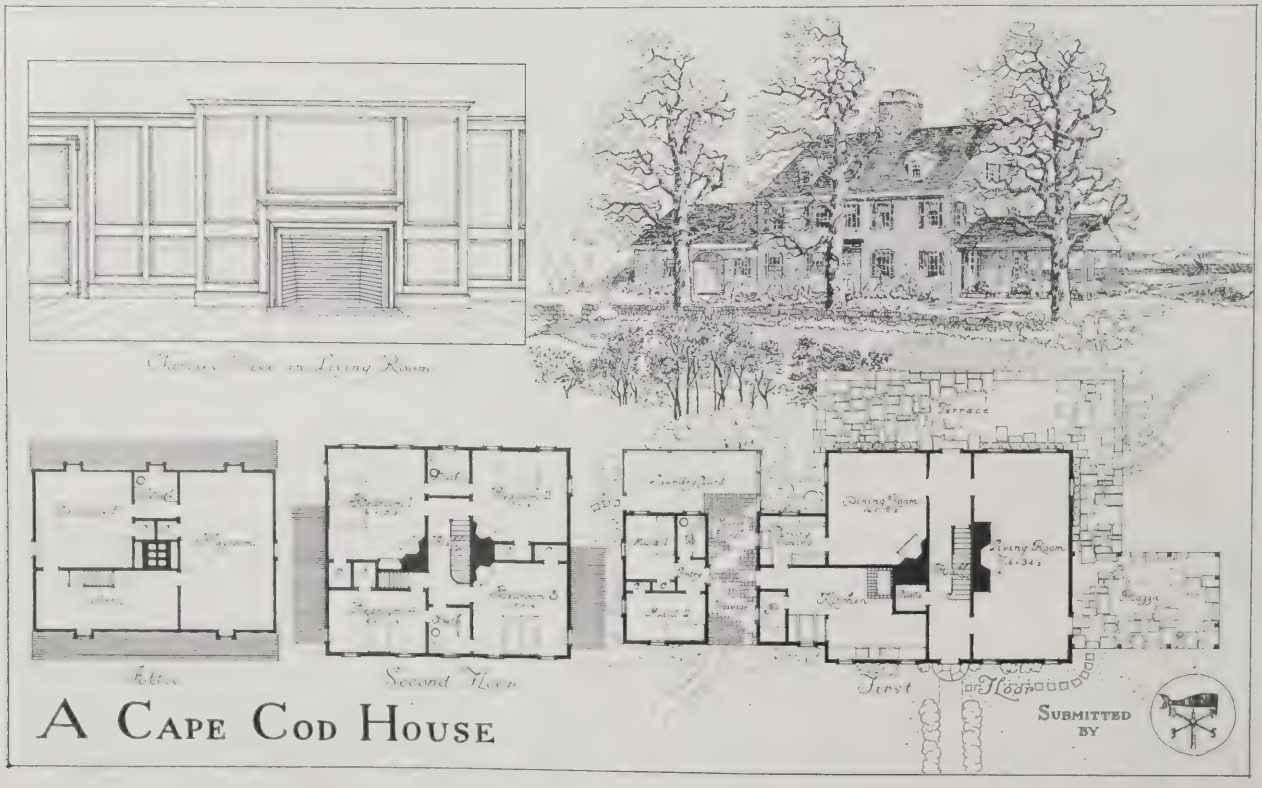
made, not as a piece of critical writing for public information, but to do Mr. Severance injury. The very fact that Mr. Severance has announced his authorship of the building by a large sign, contrary to the usual custom of architects here in New York, has indicated his willingness to accept responsibility therefore, and he can hardly invite the public to admire without the concurrent privilege of condemnation; and it seems unlikely that unless Mr. Severance can prove that the statements made in *The New Yorker* were not honest expressions of the author's opinion, and were made because of personal animus against him with a desire of injuring him, he will have very much of a case. Open criticism is a thing to be hoped for rather than suppressed, as far as the architectural profession goes, and it does not seem probable that in bringing such an action Mr. Severance will have the sentiment of the architectural profession as a whole behind him, although probably architects will sympathize with him.

As indicated already, the celebrated Whistler case is the only instance which offers a reasonably close precedent. In 1878 he brought a libel action against Ruskin for his criticisms in *"Fors Clavigara."* Ruskin had described one of his "nocturnes" at the Grosvenor Gallery as "a pot of paint flung in the public face." Damages of one farthing were awarded.

Now since beauty is a thing which lies in the eye of the beholder, Mr. Severance will very likely have to prove that the writer of the article saw the building in a way which is different from that in which he described it; or at least, he will have to prove that the statement made by the writer is untrue. This is going to be difficult. If the unknown architect who is said by the writer of the article to have experienced a sense of nausea on seeing some of the detail of the Delmonico Building is called on the stand, and testifies to that effect, at least some part of Mr. Severance's case will fall to the ground. He will have to prove either that his tower does *not* have the grace of an overgrown grain elevator, or that to indicate the possession of such a quality is damaging. He will have to prove that older members of the profession do *not* burst into tears on wending their way luncheonward to the Century Club. It is obvious that Mr. Severance cannot really expect to disprove such statements, and it is entirely likely that his motive and that of Mr. Whistler are very nearly akin. Wounded vanity and the publicity sense seem to be back of the suit. It is unfortunate for the profession that any member thereof should have thought it necessary to have a court pass on the merits of his design. It is regrettable that an architect should believe that he alone among artists should be exempt from that criticism welcomed by painters and sculptors.

An article such as that in *The New Yorker* cannot but be painful, and yet it is after all a healthy sign that an unprofessional magazine should believe its readers to be so closely interested in the progress of architecture that such an article is of public interest; and we at least believe that much more such honest harsh and bitter criticism would be a stimulus and a help to the profession, rather than a cause for a suit for damages.

AYMAR EMBURY II.



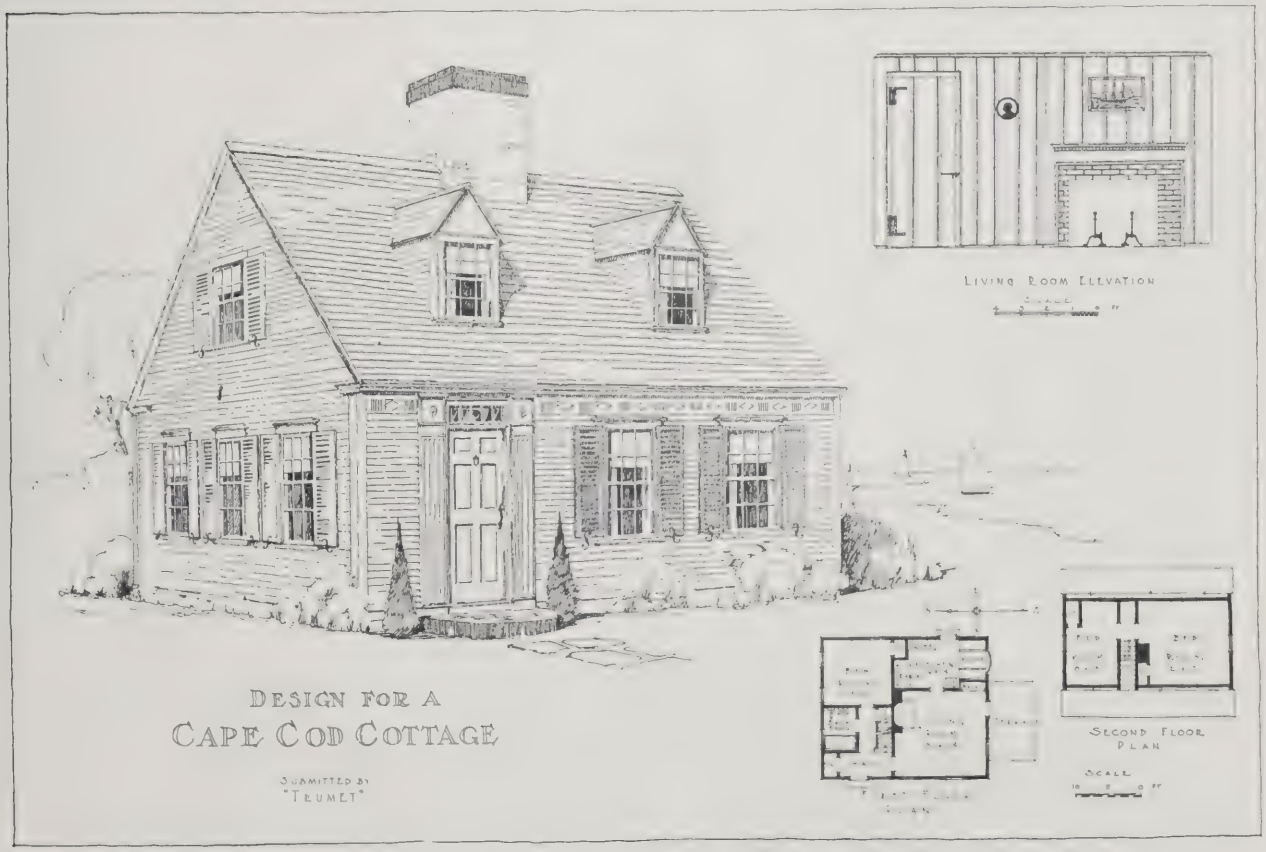
Second Prize Design, Cape Cod Competition
Gordon Allen, Architect

The Cape Cod Cottage Competition

AN architectural competition, if based on a reasonable and interesting program and judged by a jury composed of open-minded, experienced architects, is of unquestioned value in the promotion and development of better architectural design. Competitions have a stimulating effect, especially upon the younger members of the profession. Draftsmen and designers have an opportunity of trying their wings and discovering the heights to which they can fly. Of late years many real estate associations have joined with the manufacturers of building materials and publishers of magazines and newspapers in holding competitions for better homes, for better rooms, and even for ideal cellars, and all have been of benefit to architecture.

It was no new departure, therefore, when the Cape Cod Real Estate Board, of Hyannis, Mass., held a competition last summer to obtain the designs for a perfect Cape Cod cottage. In this interesting and picturesque section of the Massachusetts coast, redolent with historic associations, there still exist countless examples of a type of simple small house which has become known to the architectural profession as the "Cape Cod cottage." These charming little homes of the hardy mariners of a former generation contain many features worthy of emulation by the modern builder. Charm of proportion, perfection of scale, and simplicity of detail give to them an architectural dignity and studied refinement equal in every respect to the characteristics of the larger and more pretentious examples of Colonial architecture still to be found in the old towns and cities of the Atlantic seaboard. They indicate an innate appreciation of scale and fitness which does great credit to the builders of bygone days.

It would be interesting to know whether these Cape Cod cottages were designed by the sea captains for whom they were erected or by the master builders who constructed the ships in which these sturdy mariners embarked. Cape Cod has a lure and an appeal all its own, appreciated not only by the artists who flock there annually but by the "tired business man" as well, who seeks the recreation and repose provided by its land-locked bays and open ocean. Space does not permit publication here of the several designs receiving honorable mention, all of which show individuality and charm. The three first prizes all went to architects of Boston, who seem to be particularly imbued with the spirit and spell of the Cape Cod peninsula. The first prize was awarded to Howe, Manning & Almy, the second to Gordon Allen, and the third to Allan C. Clarkson.

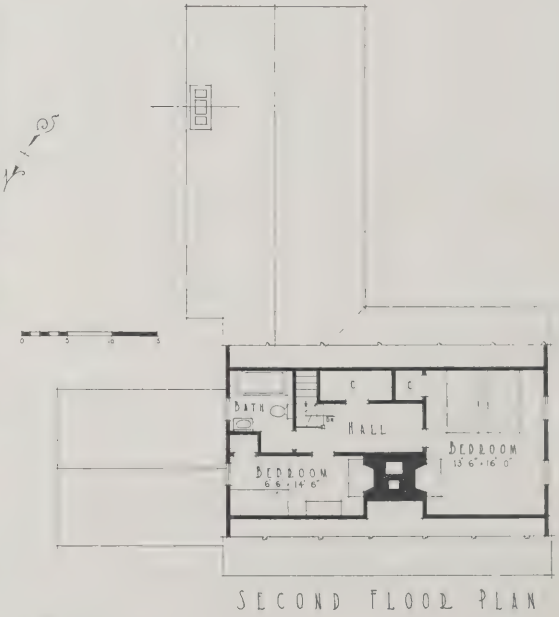


Third Prize Design, Cape Cod Cottage Competition
Allan C. Clarkson, Architect





FIRST FLOOR PLAN

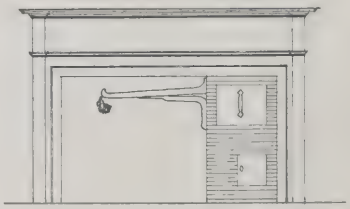


SECOND FLOOR PLAN

DESIGN FOR A CAPE COD TYPE HOUSE



ENTRANCE DOORWAY



WRITING ROOM FIREPLACE

Scale of Details

FIRST PRIZE DESIGN, CAPE COD COTTAGE COMPETITION

HOWE, MANNING & ALMY, ARCHITECTS

SMALL BUILDINGS

The Small Country House in the Colonial Style

By R. C. HUNTER

OUR small country houses designed in the true Colonial style have proved to be most successful homes. This is our style and it has always stood for the best in American living. It is not so much the individual house as a unit, but the traditional associations for which the style as a whole stands. We should not lose sight of these facts and allow our traditional type of building to be superseded by the picturesque foreign styles which have recently come into popularity. In these times of searching for something new and different, we turn to European countries for our inspiration. While we have always drawn liberally from England, with considerable success, we are now turning to France, Spain, Italy and other countries for designs, materials and furnishings. There are certain parts of our country in which these new styles have been more or less successfully and appropriately carried out, but in many instances the houses seem somewhat theatrical, both without and within. The stage and screen have influenced many people to believe that they have missed much in life, and often in this belief they turn to these backgrounds as possible "sets" for the "life ideal,"—but at best they only find themselves living—rather unsatisfactorily—the actor's part.

Then again, many home builders have turned from use of our Colonial style to that of other types because of the fact that we have so abused and misused our own style that they no longer appreciate it. A great share of this blame can be laid on the shoulders of speculative builders, who found it an economical style in which to build. Through their aim at every possible economy they have adopted standard sizes of lumber, stock sizes of windows and doors, eliminating what they considered unnecessary details such as blinds and shutters, chimneys being of sizes just large enough to encase flue linings and carried just through the roofs. Wide projecting cornices, large-paned windows, foundations high above the ground, and any sort of roofing material are considered correct. We all know of hundreds of just such houses which are classified as "Colonial" by their builders, so that it is no wonder that the true Colonial style is so often misunderstood. Then, to



An Old House at Hohokus, N. J.



Sketch of House Adapted from an Old Cottage Near Springfield, N. J.
R. C. Hunter & Bro., Architects



Cottage Near Springfield, N. J.

many, a Colonial house has necessarily meant a symmetrical structure, with a center entrance doorway, and a plan with a center hall and with rooms on either side. This is authentic and in good taste, but it has been much overdone. The correction of this general misunderstanding and lack of appreciation falls largely upon the architect, and it necessitates his searching for fresh precedents and new material.

There are a great many good examples of picturesque original Colonial work which have never been published. These are chiefly small houses, to be found in out of the way places, and in many cases they have been overlooked in the search for larger and



First Floor Second Floor

Plans of House Adapted from Old Cottage

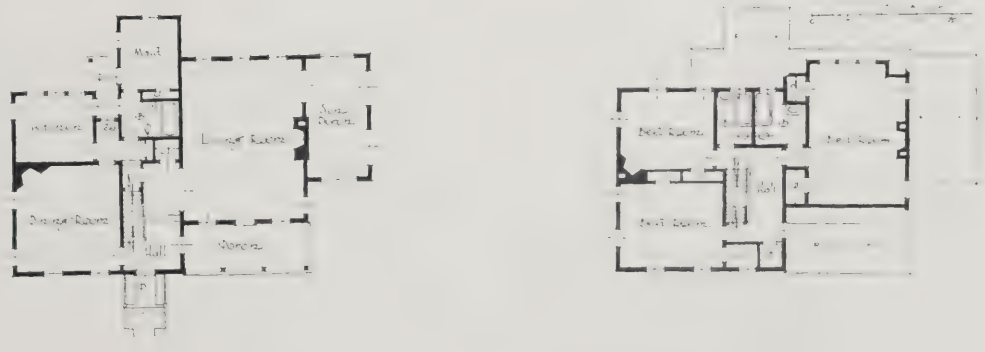


Sketch of House Adapted from an Old Homestead Near Elizabeth, N. J.
R. C. Hunter & Bro., Architects

more important examples. Such material will be found of great value to the designer in the grouping of wings, chimneys and openings as a mass. Most of these houses have but little detail, depending for their charm upon proportions and scale; heights and slopes of roofs, and the pitched roofs; well proportioned chimneys extending well above the roofs. Low extensions and symmetrically spaced doors and windows, with small-paned sash, make charming pictures in themselves. The old picket fences and gates always add a domestic note to the composition. To the houses' low ceilings and different floor levels, is due much of their quaint charm. A rather surprising



Homestead Near Elizabeth, N. J.



First Floor Second Floor

Plans of House Adapted from Old Homestead



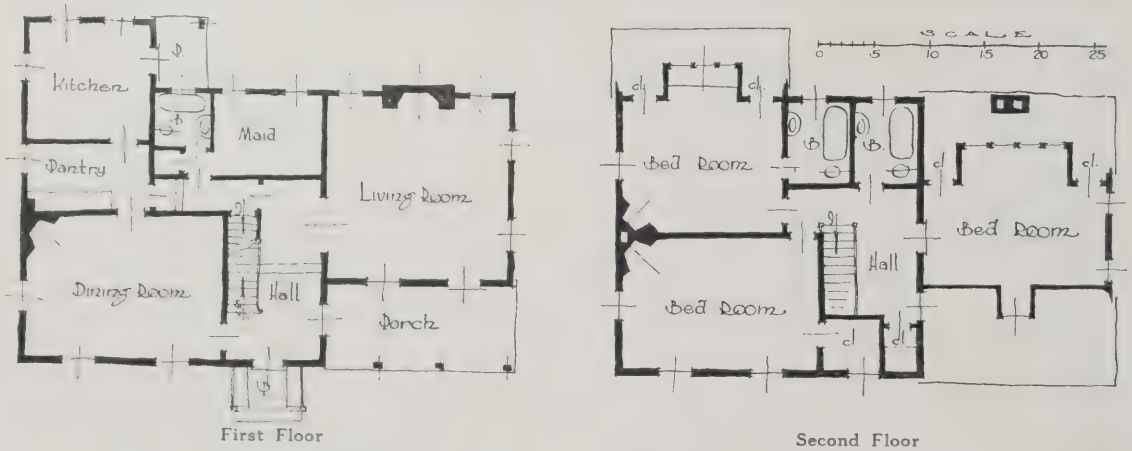
Sketch of House Adapted from an Old Cottage Near Union, N. J.
R. C. Hunter & Bro., Architects



Cottage Near Union, N. J.

fact is that almost all of these houses were originally painted red and have more recently been repainted white. In many instances the shutters still show signs of original yellow paint. Studying these modest homes often gives one a new grip, so to speak.

The accompanying illustrations will serve to give an idea of some of the excellent material that is still to be found and which should be drawn upon freely for the designing of new work. These plans and pen sketches show how easy it is to adapt the designs of these old houses to modern small-house requirements. It is largely by this sort of adaptation that the true spirit of our Colonial architecture will be kept alive.



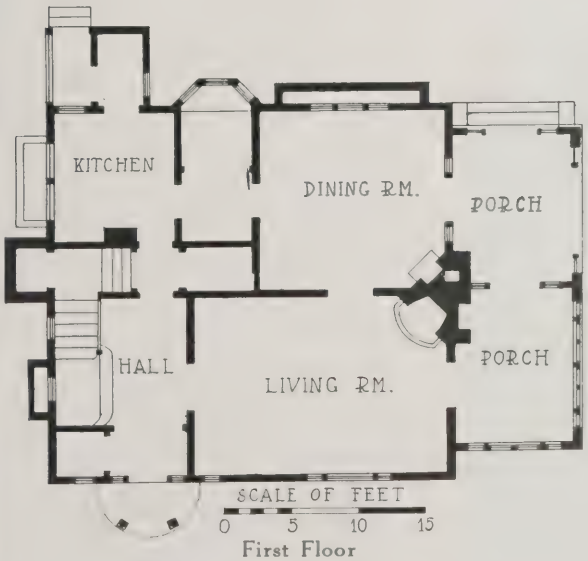
First Floor

Second Floor

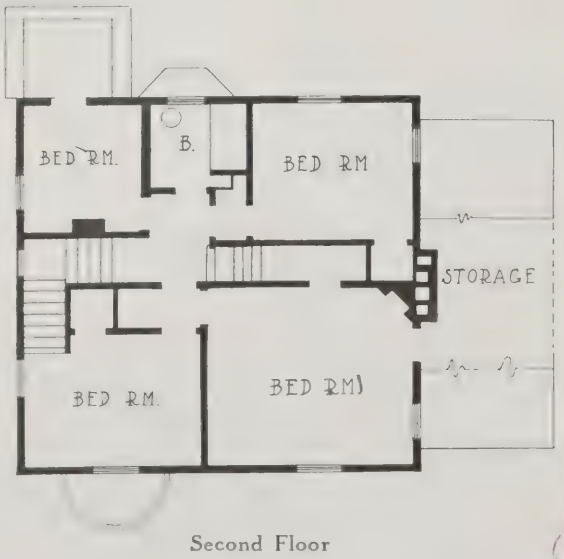
Plans of House Adapted from an Old Cottage



HOUSE OF HUGH BONE, ESQ., COLUMBUS, O.
MILLER & REEVES, ARCHITECTS



First Floor



Second Floor

FORUM SPECIFICATION AND DATA SHEET—158

House of Hugh Bone, Esq., Columbus, O.,
Miller & Reeves, Architects

OUTLINE SPECIFICATIONS

GENERAL CONSTRUCTION:
Non-fireproof; stone foundation.

EXTERIOR MATERIALS:
Shingles.

ROOF:
Shingles.

WINDOWS:
Wood, double-hung.

FLOORS:
Oak and pine.

HEATING:
Hot air.

PLUMBING:
Customary installation and fixtures.

INTERIOR MILL WORK:
Poplar and pine, painted.

INTERIOR WALL FINISH:
White plaster.

INTERIOR DECORATIVE TREATMENT:
Wall paper.

APPROXIMATE CUBIC FOOTAGE:
27,000

COMPLETED COST PER CUBIC FOOT:
42 cents.

YEAR OF COMPLETION:
1919.

THIS small, white painted house shows a conscientious endeavor to break away from the type of design commonly accepted as Colonial. The entrance door is at one side instead of at the center of the front elevation, which necessitates arranging the openings in two groups instead of three. A sort of enlarged frieze course, made of tongue and grooved siding, gives added interest to the front facade. A semi-circular entrance porch shelters and emphasizes the front door. Whether if this entrance porch had been somewhat lower in height, it would have been in better scale with the front elevation as a whole, is open to question. The informal and rather old fashioned character of the planting adds much to the appearance of this pleasant and comfortable little home.



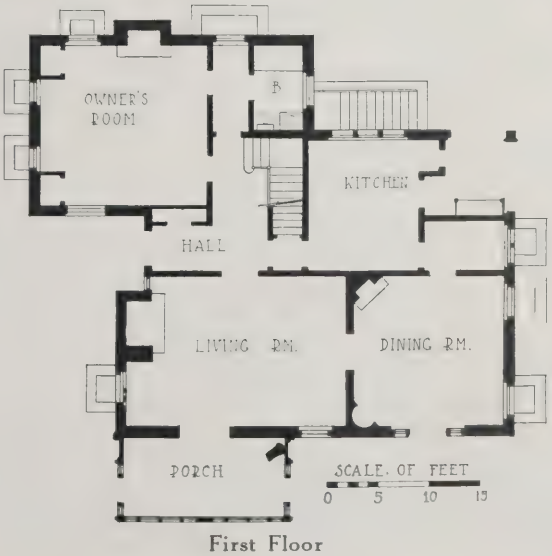
Entrance

In the plan a successful departure from the usual arrangement of rooms in small Colonial houses is carried out, quite along the lines suggested in Mr. Hunter's article in this issue of THE FORUM. The entrance hall and main stairway are at one end of the house, with a kitchen and pantry directly be-beyond. The living room and dining room occupy nearly two thirds of this first floor, connecting with enclosed and open porches which open off of each. The arrangement as well as the roof treatment of this two-room porch is unusual. The house is really smaller than it appears in the illustration, which goes to show that care in the scale and in locating the window and door openings can do much to increase or decrease the apparent size of a small house. This house is 30 feet, 6 inches long by 28 feet, 6 inches deep, which is somewhat below the usual small house dimensions, but so much care has been taken in the plan that there is no waste space on either the first or second floor. It is refreshing to find originality and charm in the design of a small house, since many people are of the impression that because a house is unpretentious and of moderate size it is impossible to give it architectural character.

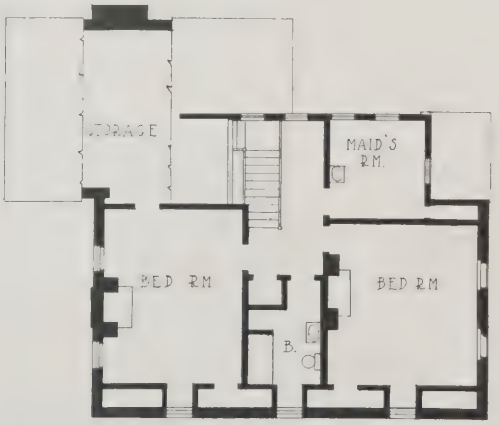


HOUSE OF HOMER BOSTWICK, ESQ., COLUMBUS, O.
MILLER & REEVES, ARCHITECTS

HERE is another small house by these well known architects, which shows particular distinction and unusual character, due both to design and materials used. Following the tradition of early Dutch architecture in this country, the ends of the house and service wing are built of stone laid to a flat surface. Entering the house at one end instead of at the center makes it possible to locate the living room and dining room along the front of the house, which, undoubtedly, faces the south. The objection often raised to locating the principal living rooms on the side of the house facing the street is apparently not considered in this case, although the enclosed porch and vine-covered pergola serve as a protection to the living room from the view of the passerby. Trellises cover the white painted stucco on the front of the house, as in many of the old country houses outside Philadelphia. The dormer windows are well proportioned and excellently spaced, breaking as they do in pleasant fashion the long line of the slightly overhanging roof. It is, indeed, gratifying to find so much originality expressed in the house's detail.



First Floor



Second Floor

FORUM SPECIFICATION AND DATA SHEET—159

House of Homer Bostwick, Esq., Columbus, O.,
Miller & Reeves, Architects

OUTLINE SPECIFICATIONS

GENERAL CONSTRUCTION:
Non-fireproof; stone foundation.

EXTERIOR MATERIALS:
Stone, some stucco, and shingles.

ROOF:
Shingles.

WINDOWS:
Double-hung, wood.

FLOORS:
Oak and pine.

HEATING:
Hot air.

PLUMBING:
Customary fixtures.

ELECTRICAL EQUIPMENT:
Modern equipment; concealed knob and tube.

INTERIOR MILL WORK:
Poplar and white pine, painted.

INTERIOR WALL FINISH:
White plaster.

INTERIOR DECORATIVE TREATMENT:
Papered.

APPROXIMATE CUBIC FOOTAGE:
40,000.

COMPLETED COST PER CUBIC FOOT:
45 cents.

YEAR OF COMPLETION:
1920.

The plan of the first floor shows connecting living and dining rooms along the front of the house, with pantry, kitchen and service porch at the rear. The entrance hall, located at the corner formed by the junction of the low, one-story wing and the main building, leads to the owner's room with small entry way, bathroom and several closets. On the second floor are two large master rooms, closets, a maid's room, and a large store room. The square footage of this house is somewhat larger than that of the small house by the same architects, which we discussed on page 81, but the same excellent and economical arrangement of rooms, halls and closets, is shown in this house as in that of the other example.



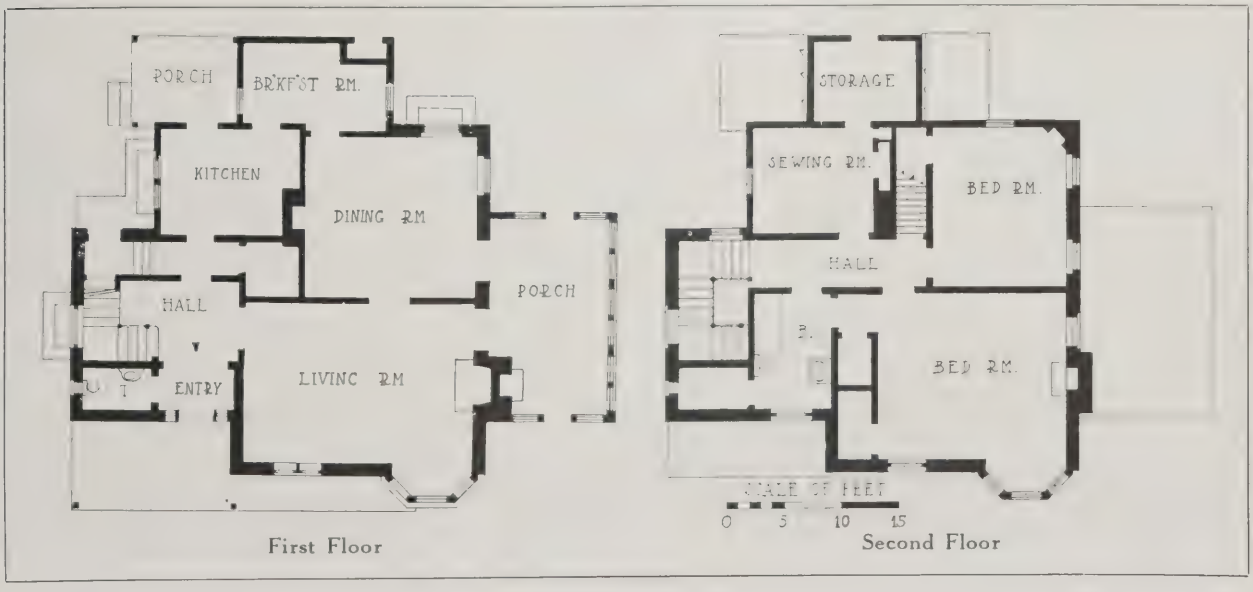
View of Street Facade



HOUSE OF WILLIAM A. FRITSCHE, ESQ., COLUMBUS, O.
MILLER & REEVES, ARCHITECTS

WE are indeed fortunate to be able to show a third small house recently completed by these clever architects. Here is a house possessing unusual originality and charm. Again simple but carefully studied Colonial details have been used, as was also done in the houses illustrated on the foregoing pages. This use of stucco and rough stone, laid to a flat surface, for such exterior details as the bay window and the wall of the entrance porch adds much to the charm and picturesqueness of this unique house. White paint for all of the wood trim and whitewash for the stonework and stucco give a cheerful aspect and make an ideal background for the shrubbery which surrounds the house. Too much praise cannot be given in our opinion to such interesting and creditable examples of originality in small house designing. The small house work of this firm is excellent.

The location of the entrance door in what appears to be an ell of the house has, in this instance, decided advantages, since it makes it possible for the front entrance, lavatory and main stair hall to be in a wing by themselves, thus obviating the necessity of their occupying valuable space in the main part of the house. Although at first glance the plan seems



First Floor Second Floor

FORUM SPECIFICATION AND DATA SHEET—160

House of William A. Fritsche, Esq., Columbus, O.,
Miller & Reeves, Architects

OUTLINE SPECIFICATIONS

GENERAL CONSTRUCTION:
Non-fireproof; stone foundation.
EXTERIOR MATERIALS:
Local limestone and shingles.
ROOF:
Shingles.
WINDOWS:
Wood, double-hung.
FLOORS:
Oak and pine.
HEATING:
Hot air.
PLUMBING:
Customary installation.
ELECTRICAL EQUIPMENT:
Concealed knob and tube, modern and complete fixtures, etc.
INTERIOR MILL WORK:
White pine and poplar, painted.
INTERIOR WALL FINISH:
Plaster.
INTERIOR DECORATIVE TREATMENT:
Papered walls.
APPROXIMATE CUBIC FOOTAGE:
32,000.
COMPLETED COST PER CUBIC FOOT:
Between 45 and 47 cents.
YEAR OF COMPLETION:
1922.

unusually irregular, it is, as a matter of fact, almost square. Located with one end of the house toward the street, it makes it possible for the living room and enclosed porch to face the small side lawn or garden. As may be noticed in the illustration, other houses are close by, but placing this house at one side of instead of at the center of the lot gives a greater sense of privacy than is usually possible in real estate developments, where the lots are seldom more than 2,500 square feet in area, and frequently smaller.



The Main Entrance

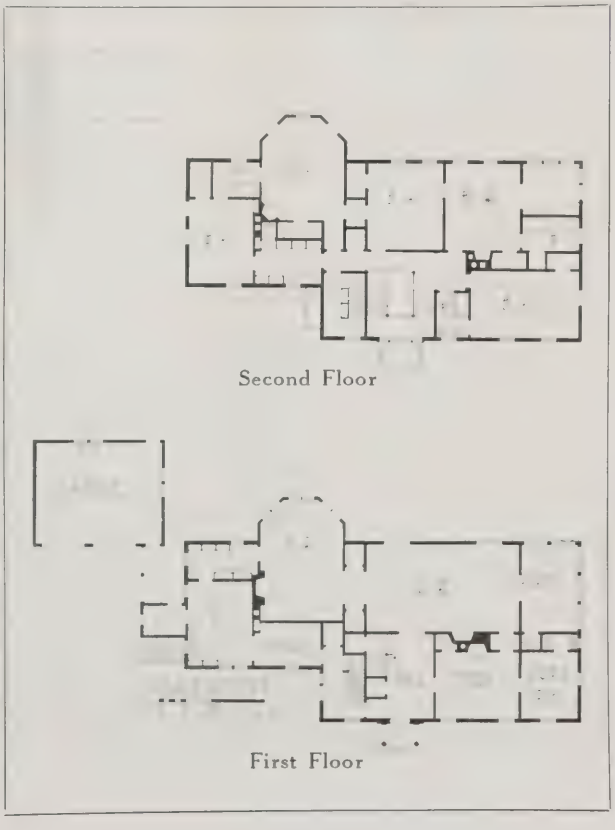


HOUSE OF DR. D. B. SINCLAIR, PRINCETON, N. J.
Park & Morgan, Architects

ALTHOUGH larger than the houses we have been analyzing on the foregoing pages, the same interesting characteristics give this house dignity and distinction. Windows are well placed and proportioned, leaving expanses of unbroken wall surfaces such as Mr. R. C. Hunter found in so many of the old farm houses he has studied and photographed. The entrance porch with the large window above forms the chief architectural feature of this otherwise simple design. Whether the treatment of this entrance bay is in scale with the other details of the front elevation may be open to discussion, but it is at least interesting and attractive in itself. The pitch of the roof, broken by one large chimney, is exceedingly good, and it is only to be regretted that need of rooms on the third floor necessitated the in-



The Hall



FORUM SPECIFICATION AND DATA SHEET—161

House of Dr. D. B. Sinclair, Princeton, N. J.,

Park & Morgan, Architects

OUTLINE SPECIFICATIONS

GENERAL CONSTRUCTION:
Double wood frame.

EXTERIOR MATERIALS:
Shingles.

ROOF:
Shingles.

WINDOWS:
Double-hung, wood.

FLOORS:
Quartered oak on first floor; pine on second.

HEATING:
Steam (double pipe).

PLUMBING:
Wrought iron pipe and enameled fixtures.

ELECTRICAL EQUIPMENT:
Lighting.

INTERIOR MILL WORK:
White wood.

INTERIOR WALL FINISH:
Sand-finished plaster on metal lath on first floor; paper on second.

APPROXIMATE CUBIC FOOTAGE:
70,000, including garage.

COMPLETED COST PER CUBIC FOOT:
45 cents.

YEAR OF COMPLETION:
1922.

troduction of dormers. Unbroken roof surfaces invariably add strength and character to a small house.

From the plans it is also easily seen that this can hardly be classed as a small house. The living room is spacious and well proportioned, forming as it should the principal room on the first floor, off of which open the main entrance and stair hall, a large dining room, a study, and a sun porch. The study and the work room beyond are undoubtedly used as a physician's office and examination room, so located that they do not interfere with the living part of this floor. A large kitchen, servants' hall and pantry, as well as the dining room, are located in the wing of the house. Through the kitchen and rear porch the garage may be reached without going out of doors, always a desirable arrangement in the country. On the second floor are five good sized bedrooms, a sleeping porch and three bathrooms.



View of Dining Room from Living Room



HOUSE OF F. D. BARTOW, ESQ., WOODS HOLE, MASS.
AYMAR EMBURY II AND LEWIS E. WELSH, ASSOCIATED, ARCHITECTS

IT is always a pleasure to show illustrations and plans of a house by these unusually talented architects, whose fame as designers of large and small country houses is widespread. Probably no architect has made a more careful, far-reaching and endless study of every phase of American domestic architecture during the entire colonial period than has Mr. Embury. In this long, low, seaside farm house, many of the outstanding details which characterize Mr. Embury's work are found. The simple, dignified entrance door; the well proportioned windows, varying in sizes according to their location on the first or second story; paneled shutters and louver blinds; massive end chimneys, and agreeable unbroken roof slopes give to this house a very definite distinction.

Here again we have an example which can hardly be considered a small house, but it may well be legitimately shown in this group because it includes architectural features so necessary to successful small house design. The introduction of lattice work in the kitchen and maids' porches forms a pleasing decorative note. The marked contrast between the character of the front and rear elevations is another of the successful features of this house. The entrance front is plain and severe to a degree. The overhanging roof of the maids' porch, carried almost the entire length of the rear elevation, gives horizontal emphasis and heightens the long, low appearance of this side of the house. The shingles have been left in their natural state so that they will gradually turn silver gray under the influence of the salt sea air. Instead of painting the trim white, as is so often done, it has in this case been painted a warm, light gray to harmonize with the eventual color of the shingles which cover the walls.



As indicated on the exterior, the interior is divided into three principal rooms besides the kitchen. The living room occupies the entire western end of the house, which on the exterior is treated almost as a separate building at-

FORUM SPECIFICATION AND DATA SHEET—162

House of F. D. Bartow, Esq., Woods Hole, Mass.,

Aymar Embury II and Lewis E. Welsh, Associated Architects

OUTLINE SPECIFICATIONS

GENERAL CONSTRUCTION:
Frame.

EXTERIOR MATERIALS:
Shingles.

ROOF:
Shingles.

WINDOWS:
Double-hung.

FLOORS:
Pine.

HEATING:
Hot air.

INTERIOR MILL WORK:
Kiln-dried white wood.

INTERIOR WALL FINISH:
Paint, and plastered panels in hall.

COMPLETED COST:
About $32,000.

tached to the main structure. This room, 34 feet long by 17 feet wide, has windows on three sides and a large covered porch opening off one side. The dining room extends through the house from front to back, making it possible to have windows at each end of the room. The extending of the dining room entirely through the house was often done in old New England farm houses. A guest room with bath and large closet is also located on the first floor. Three of the master bedrooms on the second floor are located on the front of the house, from which a fine view of the ocean may be had. Such utility rooms as baths, linen and sewing rooms are located at the rear of this floor. The stairway leading up from the entrance hall breaks the long passage way at the central point. This is another example of the economy and effectiveness obtained by building an enclosed stairway. It should be much more widely used.



The Entrance



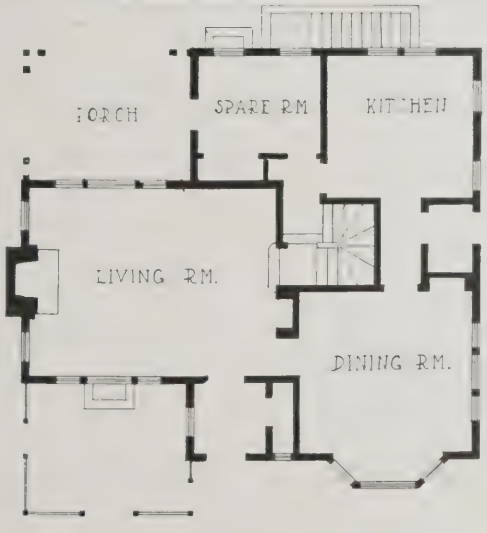
Service Wing



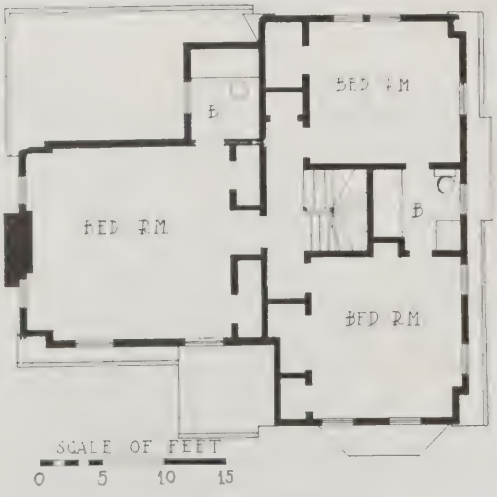
HOUSE OF D. W. WHITE, ESQ., DOUGLAS MANOR, N. Y.
ALFRED A. SCHEFFER, ARCHITECT

IN the selection of these eight small houses in the Colonial style we have endeavored to show examples to illustrate Mr. R. C. Hunter's well founded theory that a house, either large or small, does not necessarily need to be formal and balanced in design and plan in order to be characteristic of this style. The cozy, homelike quality of this house at Douglas Manor is due quite as much to the irregularity of the plan as to the care taken in the details. The pleasing proportions of the windows and their small panes add much to the attractiveness of the design. It might be wished that either louver blinds or paneled shutters had been used instead of the rather heavy type of board shutters, which seem a little crude in comparison with the refinement of the detail shown in the entrance door, garden fence and bay window.

The plan is simple, straightforward and well arranged. Again we find no waste space or objectionable jogs or angles in the several rooms. Although the entrance door opens directly into the living room,



First Floor



Second Floor

FORUM SPECIFICATION AND DATA SHEET—163

House of D. W. White, Esq., Douglas Manor, N. Y.,
Alfred A. Scheffer, Architect

OUTLINE SPECIFICATIONS

GENERAL CONSTRUCTION:
Frame.

EXTERIOR MATERIALS:
Walls of 24-inch shingles.

ROOF:
18-inch wood shingles.

WINDOWS:
Double-hung; stock, white pine.

FLOORS:
Oak in living and dining rooms and bedrooms; kitchen, pine; baths, tile; front entry, brick.

HEATING:
Steam; heat regulator.

PLUMBING:
Brass piping, standard enameled iron fixtures.

INTERIOR MILL WORK:
White pine.

INTERIOR WALL FINISH:
Sand finish in living room and stair hall; white plaster elsewhere.

DECORATIVE TREATMENT:
Wall paper in dining room and bedrooms; kitchen and bathroom walls painted.

APPROXIMATE CUBIC FOOTAGE:
27,000.

COST PER CUBIC FOOT:
55 cents.

DATE OF COMPLETION:
April, 1925.

the introduction of an exterior vestibule keeps out the winter draughts. The main stairway leads directly from the living room, but it takes up no valuable space in the room itself, and the archway through which it is reached could easily be curtained in the winter with heavy hangings to exclude cold draughts. Although the stairway may often form an interesting architectural detail when located at the end or side of a living room, the space that it occupies and its unavoidable draughts detract much from the desirability of thus locating the means of access to the second floor. This enclosed stairway, which is an attractive architectural feature, is logically placed near the center of the house, making it possible to have three principal rooms on each floor. This most livable and compact small house plan is so much better than the average that it might well serve as a precedent to be followed in designing other houses.



The Stairway



Living Room Fireplace

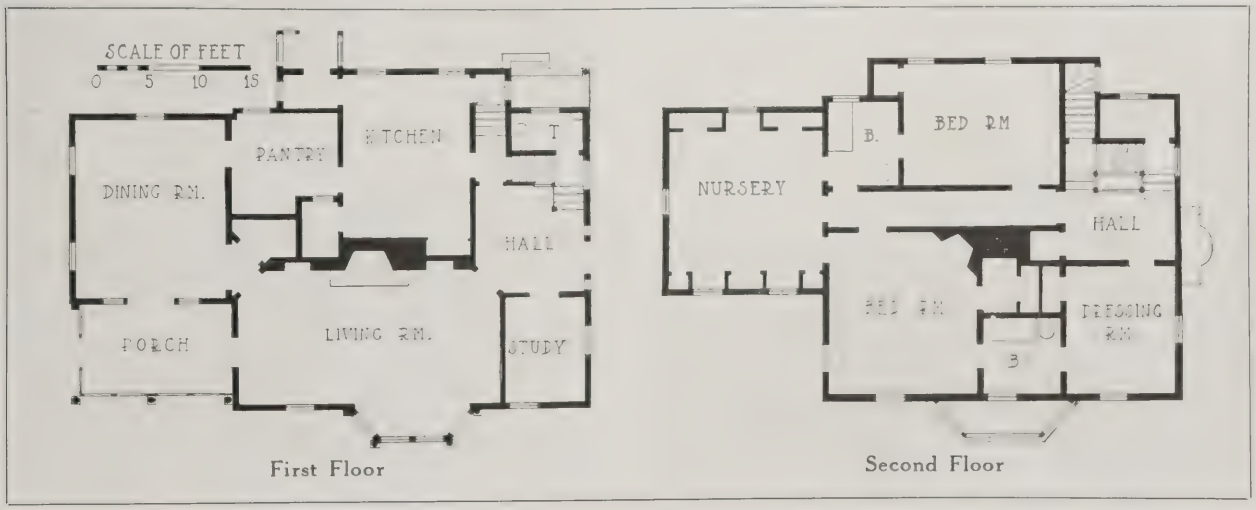


The Main Entrance



HOUSE OF J. WHARTON POOR, ESQ., FLUSHING, N. Y.
ROGER H. BULLARD, ARCHITECT

HOSPITALITY and solid comfort are suggested by the generous proportions of this substantial Colonial farm house. Although in exterior design it would seem to be of the typical center-hall, four-room plan, as a matter of fact the arrangement of the rooms is quite unbalanced and unusual. The entrance door is at the center of one end of the house. A service stairway leads from the kitchen to the upper landing of the main stairway, an excellent arrangement in a small house where space is not available for including a separate service stairway from the first floor to the attic. Off of the first landing of the stairway is a lavatory, above which is a large linen room. Besides a spacious living room and dining room with windows on three sides, large pantry and kitchen, there is a small study or reception room opening directly off the entrance hall. Whenever the space permits, it is an excellent idea to include a small study or reception room near the front door in even small houses. The large bay window opening off the living room is another one of the attractive details of this house. Bay windows are frequently found in American Colonial architecture, both in the north and the south, so that the use of this detail is not only consistent with precedent but adds much to the comfort as well as the appearance of a house in this style. Gray stained shingles, white painted wood trim and green painted louver blinds



FORUM SPECIFICATION AND DATA SHEET—164

House of J. Wharton Poor, Esq., Flushing, N. Y.,

Roger H. Bullard, Architect

OUTLINE SPECIFICATIONS

GENERAL CONSTRUCTION:
Frame; concrete foundation.

EXTERIOR MATERIALS:
Shingles and siding.

ROOF:
Wood shingles.

WINDOWS:
Double-hung and casement.

FLOORS:
Pine.

ELECTRICAL EQUIPMENT:
Lighting.

INTERIOR MILL WORK:
White wood.

INTERIOR WALL FINISH:
Plaster.

INTERIOR DECORATIVE TREATMENT:
Wall paper.

APPROXIMATE CUBIC FOOTAGE:
46,232.

COMPLETED COST PER CUBIC FOOT:
34 cents.

DATE OF COMPLETION:
June, 1918.

mark the decorative details of this house. The rooms on the second floor closely follow in location and sizes the rooms below, excepting that the owner's suite, including bedroom, bath and dressing room, occupies the space on the second floor directly over the living room and study below. The gambrel roof gives sufficient headroom for locating two servants' rooms and bath on the third floor. The slight overhang of the second story suggests some of the early Connecticut farm houses; this is also true of the successful treatment of the living porch, which is so located that it is accessible from both the living room and dining room, and which reminds one of the old "woodshed" of many a New England farm house.



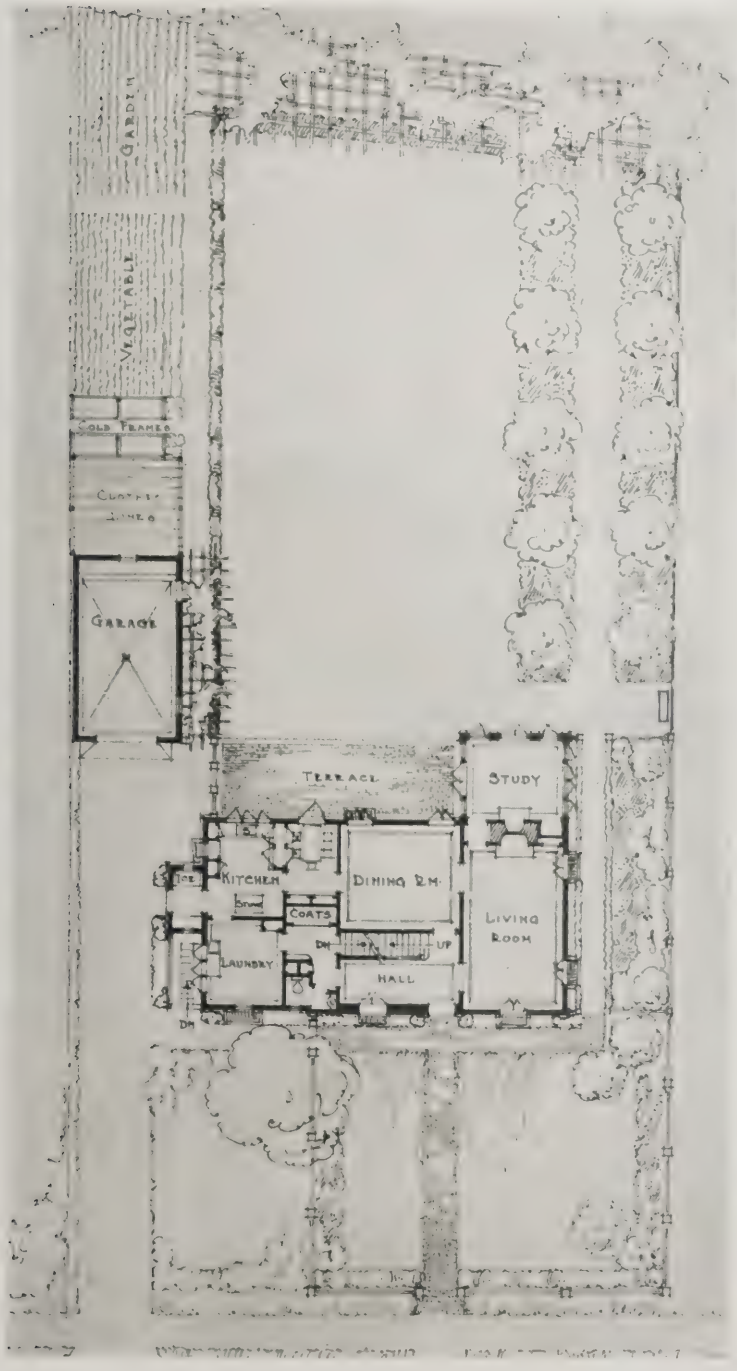
The Stairway



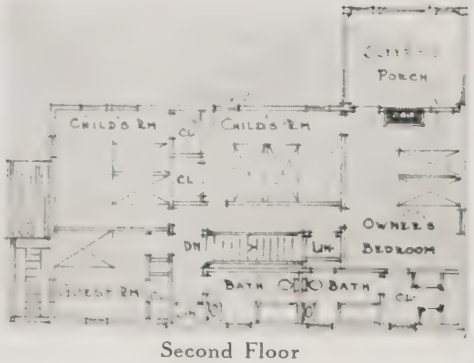
The Entrance



HOUSE OF JAMES H. CLEAVES, ESQ., WINCHESTER, MASS.
FROST & RAYMOND, ARCHITECTS



Plot and First Floor Plan



Second Floor

HERE is an example of simple Colonial design somewhat different from the type usually found. The large, well proportioned windows, which on the first floor extend to the ground; the use of classic detail for the enframement of the entrance door; and the flat tongue and grooved siding with which the main part of the house is covered, suggest to some extent the details which characterize the Greek Revival type of American architectural design back in the early forties. There is severity as well as dignity in this simple, slightly formal design, further emphasized by the heavy louver shutters or blinds. As the character of the service wing, where painted shingles, smaller windows and paneled shutters are used, is quite different from that of the main house, it might have been more interesting had the cornice line and ridge pole of this service wing or end of the house been somewhat lower than those of the main building instead of on the same line. The advantage in keeping the floor levels and the ceiling heights of the service wing the same as in the main house, of course, is that it simplifies construction and reduces cost, important considerations.

Colonial detail, plain in character, is used throughout the interior of the house. The plan has several interesting features which cause it to differ from the usual layout found in small houses in the

FORUM SPECIFICATION AND DATA SHEET—165

House of James H. Cleaves, Esq., Winchester, Mass.,
Frost & Raymond, Architects

OUTLINE SPECIFICATIONS

GENERAL CONSTRUCTION:
Wood.

EXTERIOR MATERIALS:
Matched boarding; shingles on service end.

ROOF:
Cedar shingles.

WINDOWS:
French windows in dining room, hall and front of living room; casements in study, kitchen and laundry; rest of house, double-hung.

FLOORS:
Kitchen, breakfast room, laundry, rear hall and baths, linoleum; all other floors plain oak.

PLUMBING:
Iron pipe throughout.

ELECTRICAL EQUIPMENT:
Special wiring and meter for power.

INTERIOR MILL WORK:
Pine.

INTERIOR WALL FINISH:
Soft plaster.

DECORATIVE TREATMENT:
Kitchen, laundry and breakfast room, painted.

APPROXIMATE CUBIC FOOTAGE:
38,200.

COST PER CUBIC FOOT:
58 cents.

TIME OF COMPLETION:
Fall of 1921.

Colonial style. The entrance hall, instead of extending through the house, runs the long way, with the dining room occupying the rear of the first floor. Here an open paved terrace permits the use of casement French windows, through which access to the garden may be had. The living room, with a study directly back of it, is well proportioned, occupying one end of the first floor plan. The side hall, with coat closet and lavatory, kitchen of sufficient size, with combination pantry and breakfast alcove opening off of it, and a laundry complete the first floor.

It is evident that the same careful study which was devoted to the plan of the first floor is also responsible for the logical and simple arrangement of the rooms and baths on the second floor. The owner's bedroom and sleeping porch, as well as the two rooms for children, are located at the end and rear of the house overlooking the garden and probably face south. A small guest room, two baths and closets are located along the entire street front of the second floor. This arrangement of rooms is unusual, but it is logical in a small house located quite near the street, an arrangement, however, which is seldom found in either large or small houses of the colonial period, where each of the floors was almost always divided into four rooms of very nearly equal sizes.



House of James H. Cleaves, Winchester, Mass.

INTERIOR ARCHITECTURE

The Salon, Hotel de Tesse, Paris

By C. HAMILTON PRESTON

THIS most beautiful structure, No. 1 Quai Voltaire, was built between the years 1765 and 1768 after the plans and elevations of Pierre Noel Rousset, an architect of whom comparatively little is known, and who, in fact, died before the building was even begun. Yet this work alone is such a masterpiece and its rank as an architectural achievement is so high that he must have been a man of rare taste and of ability of an advanced order.

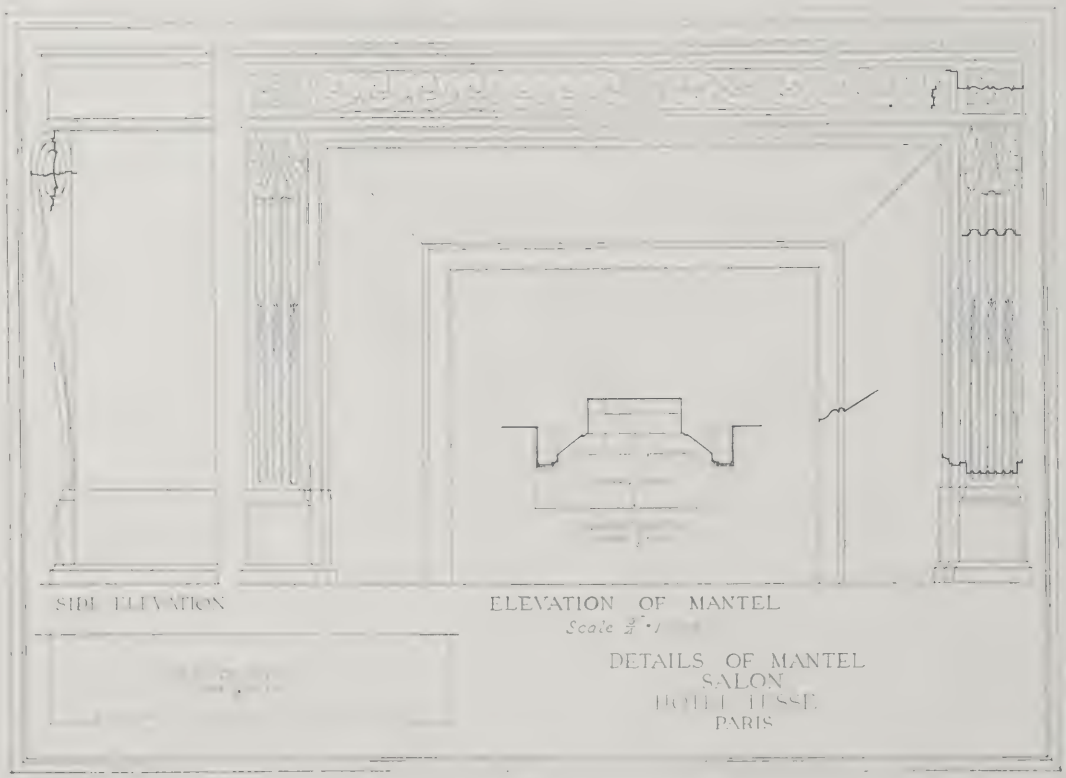
The room which is the subject of these measured drawings was formerly the *salle a manger,* but serves at the present time as a *salon.* In purity of detail and nobility of design, executed entirely in plaster, it is by far the most satisfying of the several fine rooms in the building. On entering one is impressed by its great dignity, secured largely by the use of Ionic pilasters, which resemble very closely those used on the exterior, and by the four double doorways exactly balanced on opposite sides of the room, and by a fifth entrance doorway and two huge windows on a third side. The cornice is rich in design and classic in feeling. The mantel is executed in white marble. It is difficult to describe the color of this room. At one time certain owners had it painted to imitate wood. The present occupants, discovering the beautiful color beneath the wood tone, had this layer of paint removed, with the interesting result that it now resembles marbleizing, although it is not. The body color is really a warm gray, but there are tones and tints of rose and mauve and yellow all through it and even bits of brown and black, so that the whole effect is subtle and elusive. Dignified, quiet, restful, ornate yet not over-ornamented, this room stands out; it may well be studied for modern adaptation.



Bas-relief over Doorway, Hotel de Tesse



Doorways and Mantel in Salon, Hotel de Tesse

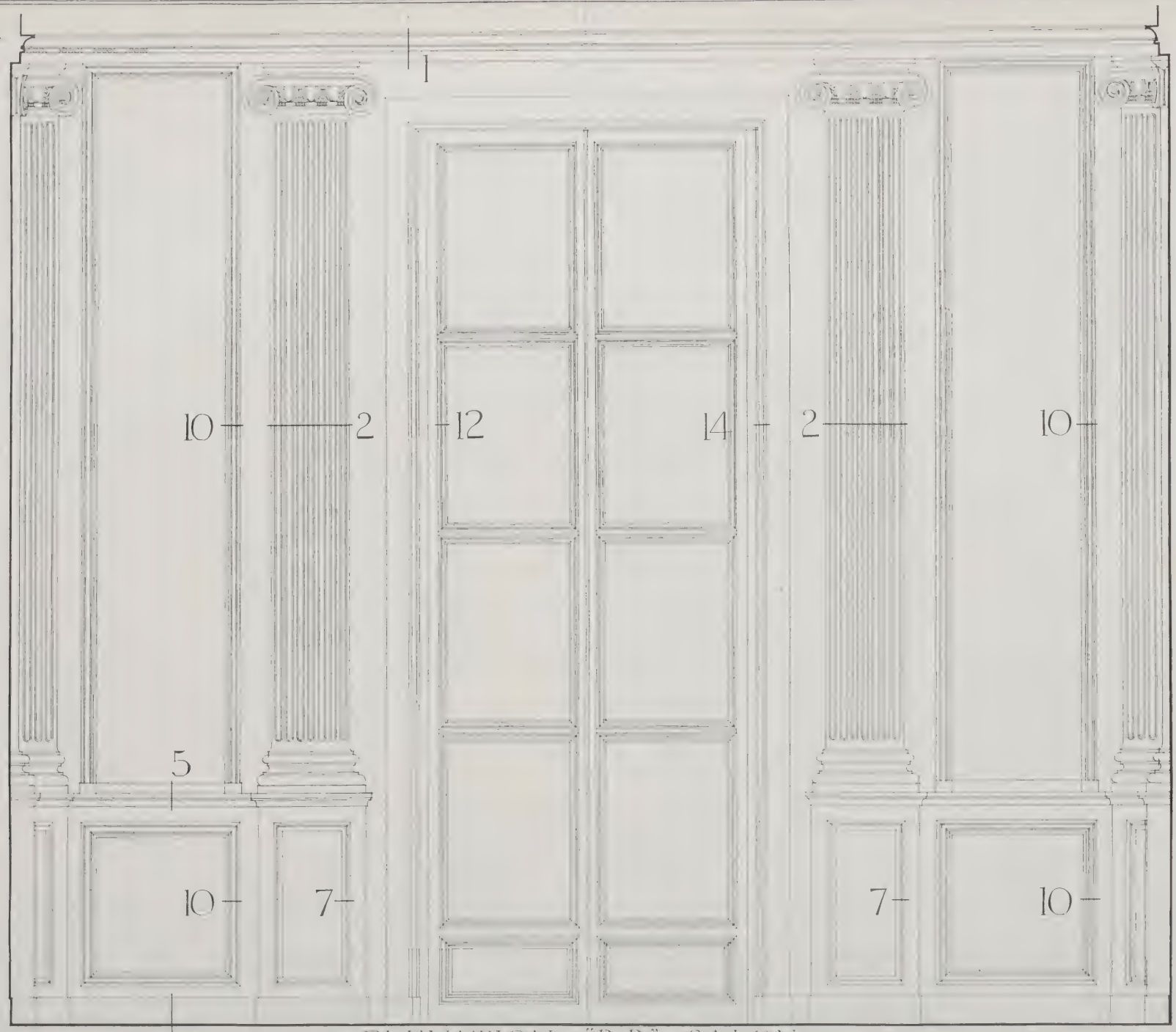




ELEVATION — "A A"

Scale $\frac{3}{8}$ = 1 Foot

SALON
HOTEL TESSE
PARIS



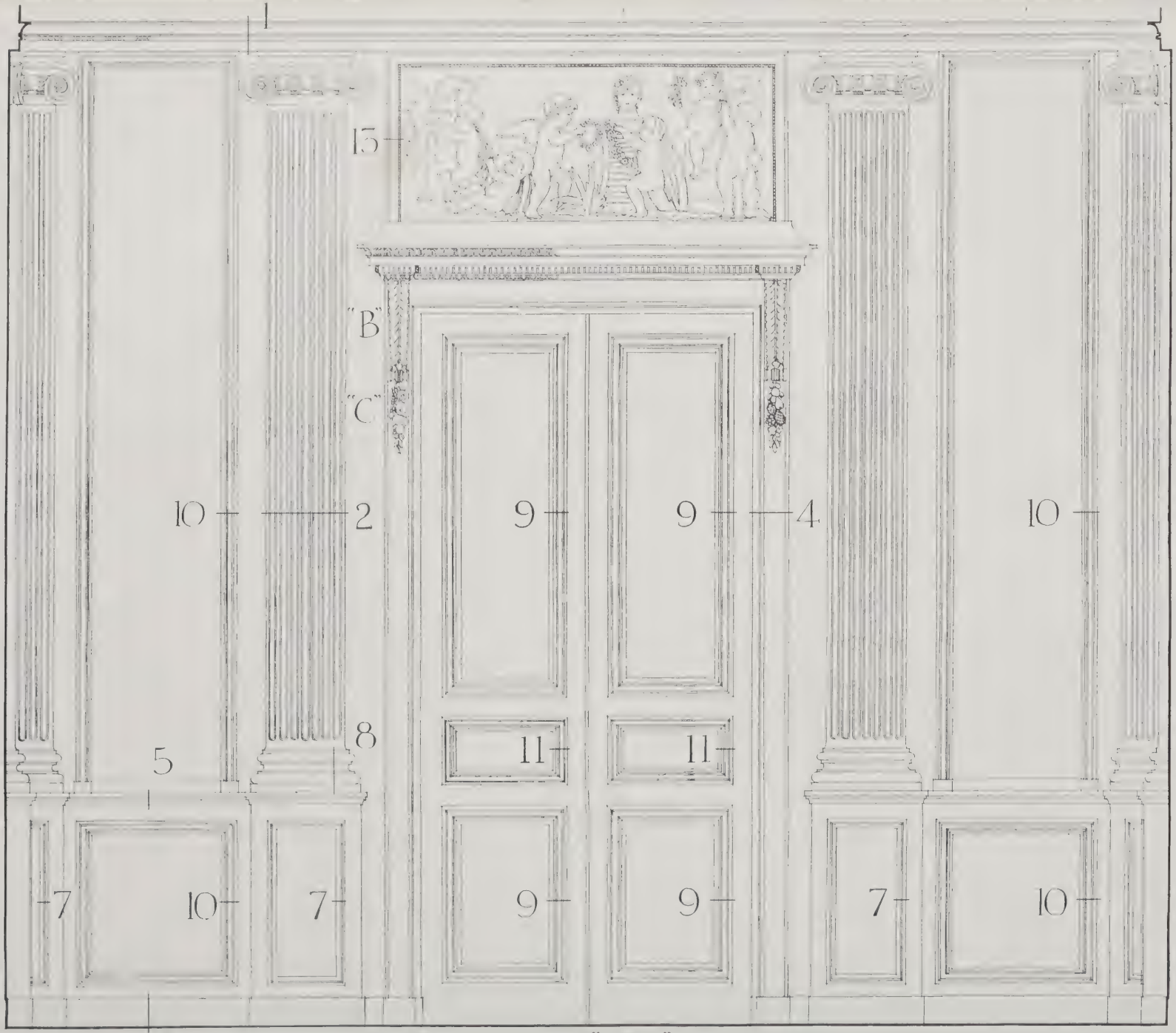
ELEVATION ~ "B B" SALON
HOTEL TESSE, PARIS Scale ½" = 1 Foot



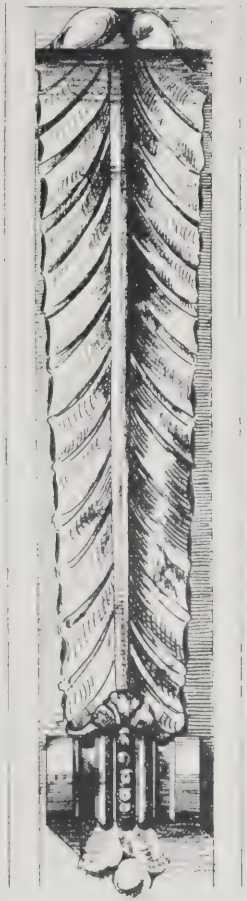
ELEVATION — "C C"

SALON
HOTEL TESSE
PARIS

Scale $\frac{3}{8}$" = 1 Foot



ELEVATION ~ "D D" SALON
HOTEL TESSE, PARIS Scale $\frac{1}{2}$" = 1 Foot

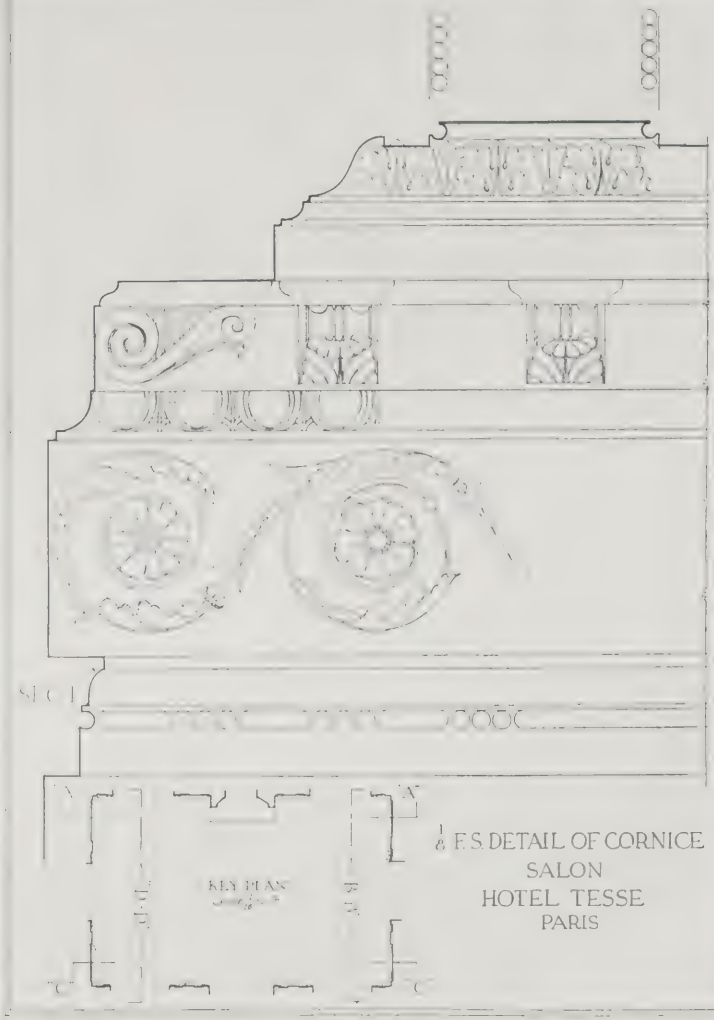


DETAIL "B"

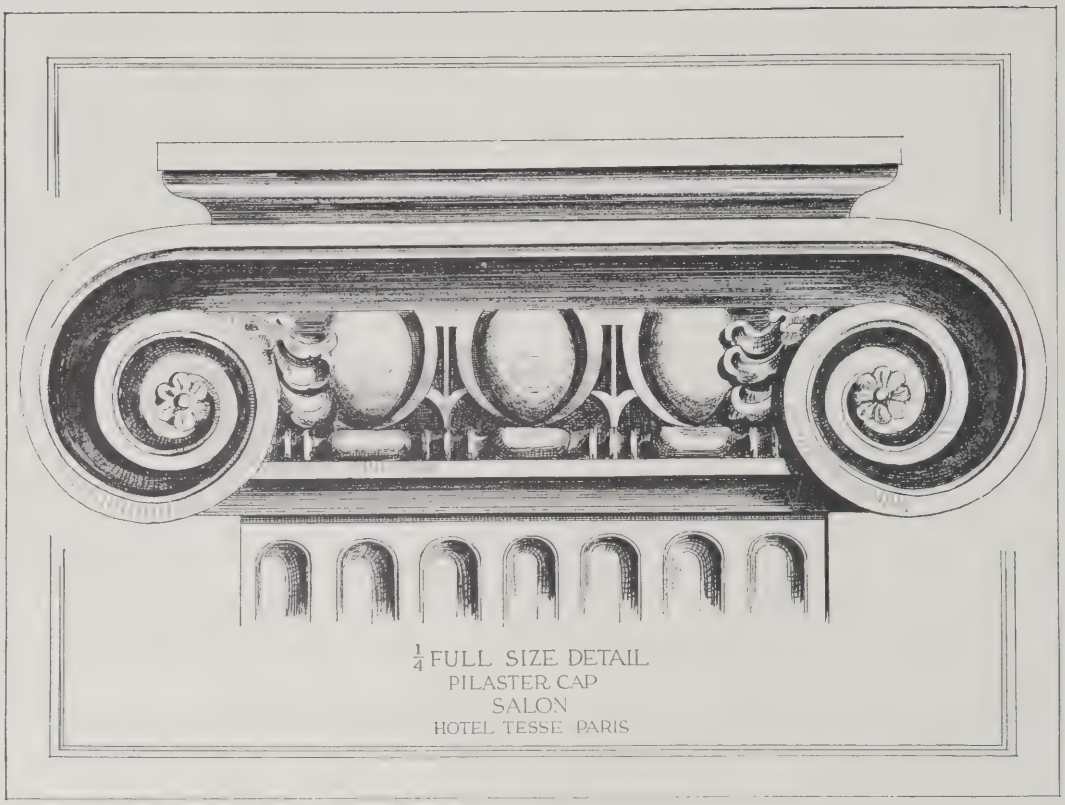


DETAIL "C"

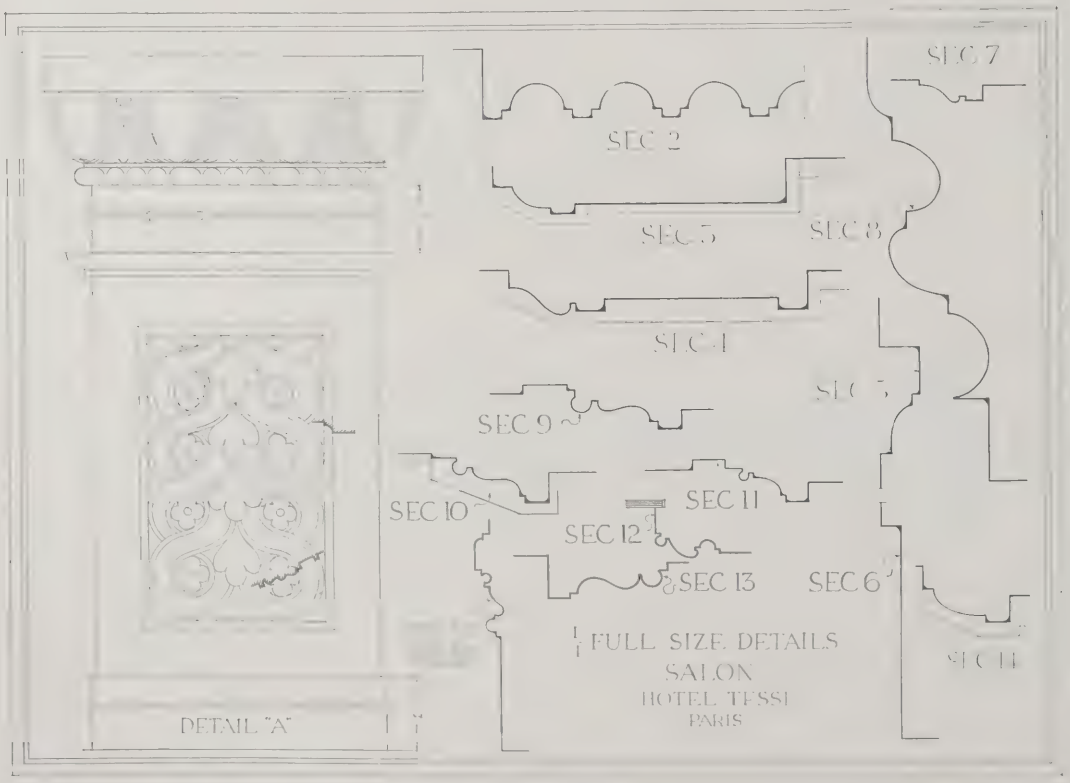
1/4 FULL SIZE DETAILS
SALON
HOTEL TESSE
PARIS



1/8 F.S. DETAIL OF CORNICE
SALON
HOTEL TESSE
PARIS



¼ FULL SIZE DETAIL
PILASTER CAP
SALON
HOTEL TESSE PARIS



1/1 FULL SIZE DETAILS
SALON
HOTEL TESSI
PARIS

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Third, the cost of walnut is so little more than other cabinet woods that when durable beauty is considered, walnut is a genuine economy



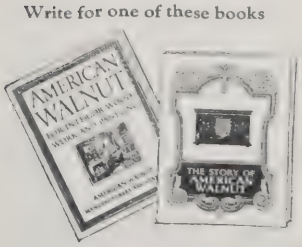
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"The Story of American Walnut" describes and pictures the use of walnut through the ages, and takes the reader on a little journey through the historic periods of furniture and tells you how to distinguish the genuine in walnut furniture. We'll gladly send you either one of these books. Simply fill in, clip and mail convenient coupon below.

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In the Barclay-Vesey Building—

THE Bonded Floors in the restaurant, cafeteria and lounge room of the New York Telephone Company's new Barclay-Vesey Building (N. Y. City) will be of interest to architects who appreciate individuality in floors. One of these resilient, quiet floors of *Gold Seal* Treadlite Tile, specially designed by McKenzie, Voorhees, and Gmelin, architects of the building, is illustrated here. Unusually large tiles in black, dark blue and green are the unique feature of this handsome installation.

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Wedemeyer & Nelson
Architects

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Although this tapestry is shown here above a mantel, it is equally effective when used over a console, sofa or doorway

AN EIGHTEENTH CENTURY VERDURE TAPESTRY

Reproducing Faithfully the Mellow Antique Weave of the Louis XV Original

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We discovered not long ago in France a lovely verdure tapestry woven back in the Eighteenth Century by one of Louis XV's most highly skilled artisans, in a design particularly adapted to this decorative use.

We also found there craftsmen who could reproduce on their handlooms each smallest detail of the original. With their extraordinary, painstaking skill, these French weavers have exceeded anything we had even hoped for. Faithfully they have reproduced the antique weave, faithfully recreated the characteristic verdure leaves and flowers and floral border—even the little pagoda lending the Chinese note that was the result of Louis XV's embassy to the Orient.

They have, in an adroit manner, known only to themselves, managed to simulate its antique and mellow appearance, matching exactly the soft browns, tans and dull greens in which the design is developed.

* * *

DECORATORS, upholsterers and the decorative services of department stores will be interested in this artistic verdure tapestry and the other tapestries Schumacher makes. They also make drapery and upholstery fabrics suitable for furnishings of every period—lovely damasks, brocades, brocatelles, velvets, toiles de Jouy, prints, chintzes and taffetas, in designs and colorings for every type of interior.

"Your Home and the Interior Decorator"

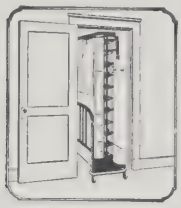
MANY people who could well afford the services of a decorator fail to do so through failure to understand how such a service functions. To explain the economy and advantages of using a decorator, we have prepared the booklet, "Your Home and the Interior Decorator."

Beautifully illustrated in color, this book is being mailed to decorators, upholsterers and the decorating service of department stores. If you have not received a copy, please write us. And let us explain our special offer whereby you may send this book to your prospective clients. F. Schumacher & Co., Dept. J-1, 60 West 40th Street, New York, Importers, Manufacturers and Distributors to the trade only, of Decorative Drapery and Upholstery Fabrics. Offices also in Boston, Chicago, Philadelphia, Los Angeles and Paris.

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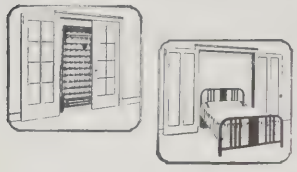
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Each Requires Minimum Closet Space



The Holmes Roller Bed

On straight run in, a 2′ 2″ door, 6′ 8″ high, can be used, with closet 5′ deep, for a full size bed. Other sizes for all shapes of closets. Holmes Roller Beds automatically lock to prevent jack-knifing and roll on maple casters having one set of roller bearings and two sets of thrust ball bearings.



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The Roll-Out Recess Bed, full size requires closet only 18″ deep, 5′ wide and 6′ 8″ high, using 2′ 6″ doors. This type brings the head of the sleeper *out into the room.* The Holmes Standard Recess Bed requires closet only 1′ 6″ deep, 5′ 0″ wide for *full size* bed. Smaller closets for smaller beds.



Two Door Pivot Beds

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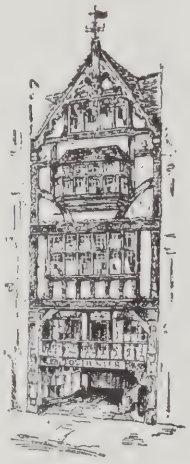
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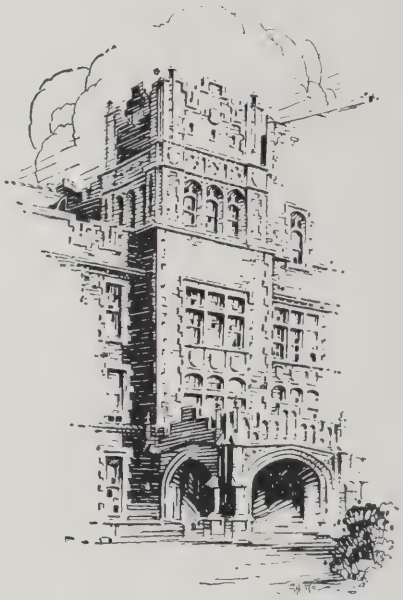
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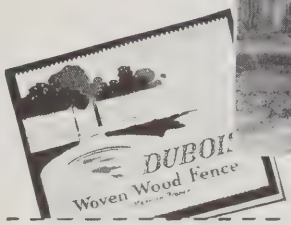
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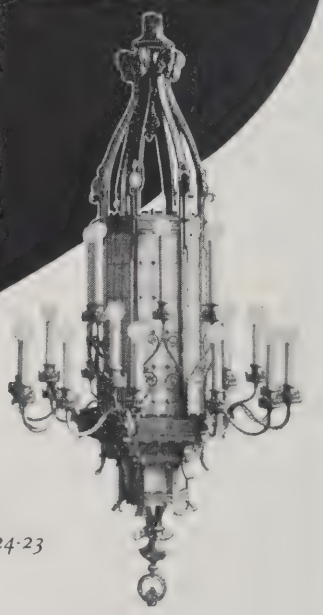
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UPON your next visit to one of your old jobs, compare the appearance of the present finish with that which was first applied. Make it a point to find out how many times the interior has been refinished.

There is nothing that is more discouraging to the creator of anything than to discover it a faded drab thing . . . to find that its beauty is but a memory. And yet, in how few cases does the interior of any building retain the pristine loveliness that fairly seemed to speak a warm welcome to anyone who entered. More often, a chill seems to steal over one upon stepping into the usual drab interior from the sunny out of doors.

Then there is the interior that is always bright and cheery that is always inviting. Constant care and periodical renewal of the finish keeps it alive — but at a considerable expenditure of time and money.

The finishes produced by Zapon OBS Lacquers and Lacquer Enamels insure permanent beauty and protection for the reason that they are chemically stable and so will not oxidize and crack. A Zapon finish will not fade or lose its mellow lustre. Water, grime, grease, alkaline or ordinary acid solutions will not injure it. An amount of abrasion that would ruin an ordinary finish has no effect upon the hard, tough finish that Zapon produces.

It is worth while for anyone interested in the economical maintenance of beauty to make a thorough examination of Zapon products.

A booklet containing a complete description of OBS Lacquers and Lacquer Enamels, together with specifications formulated from practical application on various types of surfaces, will be sent, free of charge, to any architect, builder or decorator upon request.

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2. the Architect, because after all a satisfied client is a big asset.



* For nineteen years Valspar has been a quality varnish of *known performance*. Although Valspar is not an inexpensive varnish, it is an *economical* varnish. Dollar for Dollar, Valspar gives a measure of service that has won the enthusiastic support of countless property owners both in this country and abroad. Valspar may be obtained clear and in any color. Valspar Varnish-Stain is Clear Valspar plus transparent colors. Valspar-Enamel is Valspar combined with solid covering pigments.

PURE WHITE LEAD IN OIL

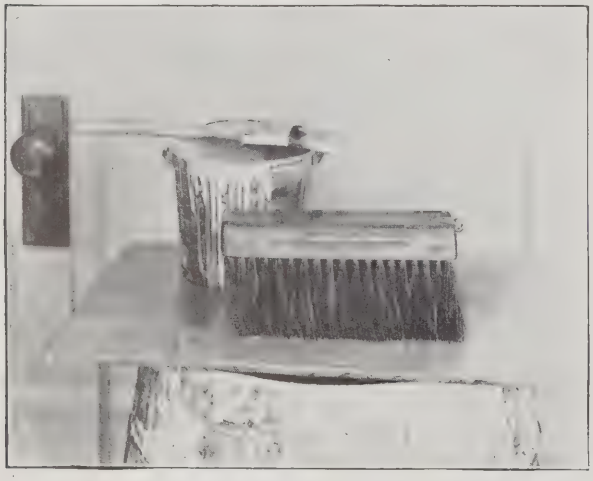
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No other kind of paint makes so dependable a foundation for various decorative treatments applied through the years

DURING the first few years of a painted wall's life, little is expected of it beyond a beautiful appearance. But when coat after coat has been applied, the real test of paint quality comes. Then wall finishes produced with Eagle Pure White Lead and turpentine or flatting oil show their ability to anchor firmly in the minute pores of the plaster and to hang on tightly for life, no matter what paint is put on top. *No other kind of paint makes so dependable a foundation for various decorative treatments applied through the years.*

The foundation for flat wall finishes

A new *smooth* plaster wall needs a coat of paint before sizing. Eagle White Lead thinned with one-half linseed oil and one-half turpentine is about right for this foundation coat. Walls



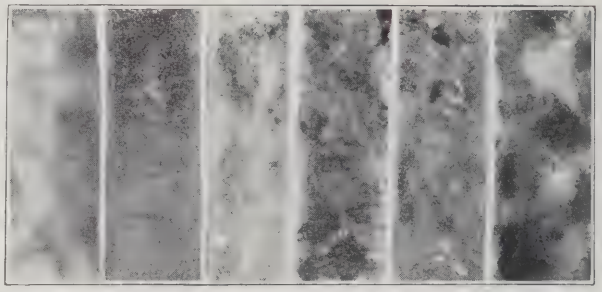
Standard wall stippling brush, used for stippling the ground coat of Eagle White Lead

which are very soft should have a higher percentage of oil.

New *rough* plaster walls usually need a soap and oil size before painting. Then mix Eagle White Lead with about one-half linseed oil and one-half turpentine.

White Lead—the best foundation for glazed color finishes

Glazed finishes employ transparent or semi-transparent colors on top of a different colored ground.



Patterns produced by different stippling tools on wet glaze color: 1, Cheese cloth; 2, Rubber sponge; 3, Burlap bagging; 4, Crumpled newspaper; 5, Natural sponge; 6, Wall stippling brush

The first consideration is to obtain a perfect foundation for the glazed color effects. *Any defect in the ground coats shows through and mars the beauty of the finish.* It is difficult to over-estimate the importance of a firmly attached first coat of paint—the foundation upon which to build a permanently beautiful finish. For either new or old walls, put on a first coat of Eagle White Lead, which anchors firmly in the pores of the surface, affording support for the several coats to come.

A rough and uniform stipple is essential if the full beauty of glazed finishes is to be achieved. Eagle White Lead, mixed with flatting oil or with turpentine only, enables the painter to produce a beautifully textured stipple which will not run together.

Write for technical information, A. I. A. *numbered*

The Eagle-Picher Lead Company has compiled technical information on the preparation and painting of interior and exterior surfaces. This information, A.I.A. numbered for specification files, is available to architects, without charge.

The EAGLE-PICHER LEAD COMPANY
134 *North La Salle Street, Chicago*

Please send me, A. I. A. numbered for my files, technical information on the preparation and painting of interior and exterior surfaces.

Name _____

Address _____

EAGLE *Pure* WHITE LEAD

OLD DUTCH PROCESS





Replacing both paint and enamel—

This famous interior finish in Gloss, Semi-Gloss and Flat

THERE are several practical reasons for the steadily increasing use of Barreled Sunlight in fine hotels, schools, hospitals, office buildings and homes. Whether applied to walls or woodwork—in white or tinted—this finish combines the best qualities of both paint and enamel.

It costs less than the better grade enamels and is so opaque that fewer coats are required to complete a job. In appearance, it is considered by many users superior to enamel.

It is easier to keep clean and more durable than other paints.

Barreled Sunlight Gloss gives a lustrous surface so satin-smooth that dirt cannot become embedded, and wiping with a damp cloth removes every smudge. This means spotless, sanitary bathrooms — kitchens — stairways — corridors — service quarters.

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Barreled Sunlight Semi-Gloss strikes a nice balance between the Gloss and the Flat finishes.

When used in the pure white, Barreled Sunlight resists for years the yellowing tendency common to so many white paints and enamels—an advantage due to the exclusive Rice Process of manufacture.

Sold in large drums and in cans. Where more than one coat is required, use Barreled Sunlight Undercoat first.

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Branches: New York, Chicago, San Francisco
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White or Easily Tinted

By simply mixing colors in oil with Barreled Sunlight white, the painter on the job can easily obtain any desired shade. In quantities of 5 gallons or over we tint to order at the factory, without extra charge. For tinting small quantities our dealers carry handy tubes of Barreled Sunlight Tinting Colors.



Barreled Sunlight

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Please send me your booklet "3 Questions Answered" including specifications, and a panel painted with Barreled Sunlight. I am interested in the finish checked here—

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FOR NEARLY HALF A CENTURY leading architects have specified Egyptian Lacquer as the finish for metal and interior hardware. Egyptian is used extensively on fine fixtures, fittings and furnishings. It protects and beautifies to the highest degree.

Make it a point to specify fixtures and fittings with Egyptian Finish. The foremost producers of the better fitments use it. It is decidedly in vogue, too, for interior finish and decoration.

If you have particular finish problems or requirements let us consult with you. We can supply scientific individual service. We can fill any prescription for special types of lacquer or special colorings.

The maker who is proud of what he makes, uses Egyptian Lacquer

The hinges reproduced are McKinney Hinges, products of McKinney Mfg. Co., Pittsburgh. This firm has long been a user of Egyptian Lacquer.

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THIS SYMBOL is the Egyptian Lacquer trade-mark. Its central figure is that of MAAT, *the Egyptian Goddess of Truth.* It typifies the integrity with which all Egyptian Lacquer products are produced... their precision, balance, and true quality .. the fidelity with which Egyptian Lacquers meet the particular needs of the manufacturer who seeks true beauty, fine finish and permanent protection for the products that he makes.

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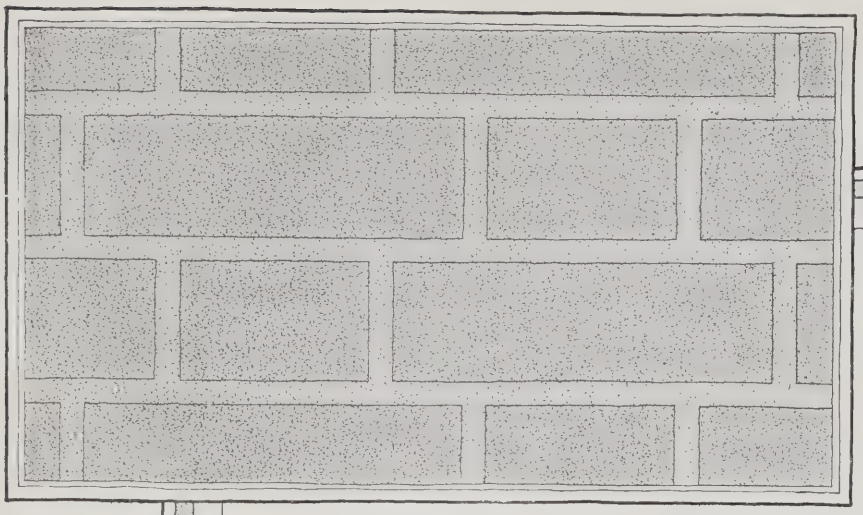
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English Cottages by W. Elmer Schofield





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are made in twelve standard colors —which will not streak, fade or run. They are in paste form and mix easily with lime or cement mortar—or the two combined. It is the policy of the Pecora Paint Company to produce a chemical (non-acid) mortar stain; a stain which has the advantage of being absolutely fade proof—exceptionally strong—and thoroughly economical. Our Mortar Stains give that deep rich color ... constantly sought and rarely found.

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Murphy Brushing Lacquer

cuts costs and saves time

on fifty Washington homes

The painters are putting a thousand gallons of Murphy Brushing Lacquer on fifty houses going up in the suburbs of Washington, D.C. These houses are being built by W. C. & A. N. Miller, large operation men of the District of Columbia.

Here is what one of their foreman painters says about their experience with Murphy Brushing Lacquer on this job:

"Having had no previous experience with Murphy Brushing Lacquer I was somewhat skeptical when its use was specified on these houses. We did have some trouble learning to use it on the first house but before noon my men had learned how to apply it successfully and were convinced of its practicality. We used three coats of Murphy Brushing Lacquer White Undercoating for the white work, the last coat serving as the finishing coat, and tinted the same material where we wanted an ivory effect.

"At the start the cost of labor and materials was slightly in excess of a four coat enamel job but the results obtained by three coats of Murphy Brushing Lacquer were so superior in appearance that we continued to use it despite its higher cost. As our men gained skill in applying it we were able to cut the cost down equal to that of enamel work, and a few days after that our cost fell below that of applying enamel.

"Some of the painters at first objected to the lacquer odor but within an hour or two they grew accustomed to it and now prefer it to turpentine fumes or the dust from the sanding of undercoats.

"We were able to save on Murphy Brushing Lacquer over enamel work in another way when we discovered that it could be applied in a perfectly satisfactory manner by apprentices as well as journeymen. Our men were able to finish a job in about one-third of the time ordinarily required by enamel. They applied two coats the first day and the finishing coat the next day. We could have put on all three coats in one day had there been any reason for doing so. Everyone who has inspected the finishes pronounces them superior to enamel work in appearance.

"We also are using Murphy Pyroxylin Wood Preparation to stain, fill and seal the floors of these houses and are securing excellent results with corresponding savings over the old method of staining and filling.

"I am convinced that these new Murphy materials are practical and economical. They have a wide field of usefulness in contract work where the time element and labor costs are big factors."

Write for color card, price list and the name of your local dealer.

Secretary Carl H. Dabelstein of the International Association of Master Painters recently inspected the lacquer work on this important job. He expressed himself as keenly interested in it.

Murphy BRUSHING Lacquer



MURPHY VARNISH COMPANY

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CALLS FOR BEAUTY IN THE FINISH

RIPOLIN

THE ORIGINAL HOLLAND ENAMEL PAINT

The architect who visualizes in his design a clean, crisp beauty in the completed work will find his ideals faithfully reproduced when the finish used is Ripolin, the original Holland enamel paint. In the porcelain-like surface of this remarkable product is beauty and economy of a kind not to be found anywhere else.



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DISTINCTIVE DUTCH BOY INTERIORS

First of a series of advertisements describing interiors decorated with Dutch Boy white-lead and Dutch Boy flatting oil.



The capitals of the columns in the lobby are painted in varied shades of green and blue. The shafts and bases are finished in antique ivory.



The shaded Tiffany finish shown in this corner was used to give the lobby lounging-room a feeling of warmth and comfort. The shading is darkest at the top to give the appearance of a low ceiling. The treatment may be reversed when an appearance of height is desired.

Color Suggestions

from the Hotel Wellington, New York



This sitting room corner shows a panel, stile, and molding treatment. A sponge mottle finish is used in the panel.

THE interior decorative scheme of the Hotel Wellington, New York City, has been much admired. The lobby, the offices, the bedroom suites were recently redecorated with the idea of achieving a quiet, dignified atmosphere.

Warmth and comfort is the dominating note in the lobby. The room is colorful and homelike. The walls have been treated with a rich Tiffany finish, which offers an effective background to the overstuffed mahogany furniture. The Tiffany finish is a combination of siennas, umbers, and Chinese blue, skilfully blended to give a leathery reddish-brown effect relieved with blue. Deep blue draperies harmonize with the sidewalls.

In order to lend a still brighter atmosphere to the room, the ornamental cornices have been carried out in brighter greens and blues, golden buff and cream. The wood trim, pilasters and columns are in antique ivory. The capitals of the columns are finished in the same colors used on the cornices.

Sponge Mottle finish in bedrooms

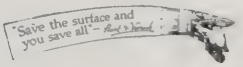
In the bedroom suites, a sponge mottle finish has been used on the wall panels. The base of this finish is a light warm buff with a pale cream mottled over it with a coarse sponge. The ceiling above the picture molding is just off white. The moldings are finished in antique ivory. The stile is a light yellow buff.

The painting of lobby, offices and bedroom suites was all done with Dutch Boy white-lead and Dutch Boy flatting oil. Dutch Boy white-lead may be tinted to any desired color. This unlimited color range makes the distinctive finishes described above extremely easy to secure.

Write the Department of Decoration

National Lead Company's Department of Decoration planned and specified the wall effects used in the Hotel Wellington. The services of this department are yours for the asking. They will gladly assist you in any decorating problem you may have. Write them in care of our nearest branch.





NATIONAL LEAD COMPANY

New York, 111 Broadway
Boston, 131 State Street
Buffalo, 116 Oak Street
Chicago, 900 West 18th Street
Cincinnati, 659 Freeman Avenue
Cleveland, 820 West Superior Avenue
St. Louis, 722 Chestnut Street
San Francisco, 485 California Street
Pittsburgh, National Lead & Oil Co. of Penna., 316 Fourth Avenue
Philadelphia, John T. Lewis & Bros. Co., 437 Chestnut Street



The Advantages of Long-Bell Douglas Fir Lumber

In Long-Bell trade-marked Douglas Fir Lumber and Timbers, architects and builders find these advantageous qualities.

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Douglas Fir is unsurpassed in strength and elastic limit among commercial soft woods.

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Long-Bell forests contain a high percentage of large yellow Douglas Fir trees, which produce the softest fir finish, of great heart content and beautiful grain effects.

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Lumbermen Since 1875
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For every vital spot and important area on the materials and structures of Industry, there is an "R.I.W." technical paint or waterproofing compound, an impregnable armour to strengthen weaknesses, defy decay, prolong efficiency and cut to the minimum repairs and overhead.

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Established 1848

Technical Paints R.I.W. REMEMBER IT'S WATERPROOF *Waterproofing Compounds*

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Remember It's Waterproof

In clubs where society gathers you will find the woodwork finished with

Vitralite

The Long-Life Enamel



Bley & Lyman, Architects *Charles A. Goltz & Son Co. Inc., Painting Contractor*

AMONG the outstanding country clubhouses built in recent years, there is probably none surpassing in charm and refinement of detail, the new home of the Country Club of Buffalo. Its appealing colonial design has a perfect setting in the hills east of the village of Williamsville, Erie County, New York.

The beauty of the woodwork in this new clubhouse is further enhanced by being finished with Vitralite, *the Long-Life Enamel.*

The true merit of Vitralite is recognized by discriminating architects in the United States and Canada who have for years appreciated its dependability. It is specified on all types of construction — modest homes and large city buildings, wherever the durability, beauty, and economy of an enamel are considered. Vitralite is guaranteed three years on exterior surfaces; it lasts indefinitely on inside work.

Consult the Pratt & Lambert Architectural Service Department — its members will be glad to help you solve your finishing problems.

"Save the surface and you save all" Pratt & Lambert Varnish

PRATT & LAMBERT-INC., 122 Tonawanda St., Buffalo, N.Y. Canadian Address: 34 Courtwright St., Bridgeburg, Ont.

PRATT & LAMBERT VARNISH PRODUCTS

"61" FLOOR VARNISH

This is the durable floor finish which successfully withstands the destructive elements of hard service. It is specified by discriminating architects, and used wherever careful consideration is given to the beauty and permanency of a floor finish.

The Pride of Ownership



IN mansion or bungalow~

is a goal the architect aims to achieve for his client. Because of nearly mar-proof hardness, Michigan and Wisconsin **birch** meets every practical requirement for fine interior woodwork of enduring beauty and great stability.



Its adaptability to a wide range of finishes—including the very popular **autumn brown,** makes **birch** a preferred trimwood for any type of building. **birch rotary-cut veneers** are practicable, as they resist all tendency to check, so common with most woods. And the beauty of **birch floors** is fully matched by their long serviceability.

Complete data upon request. May we also send you a copy of the new Birch Brochure with our compliments? Contains valuable tables upon Physical Properties of all American Hardwoods

THE BIRCH MANUFACTURERS
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"Beautiful Birch for Beautiful Woodwork"



A simple corner china closet

In the small dining room or dining alcove a simple corner china closet or two like this Curtis design C-704, can add a note of distinction architecturally and at the same time provide the housewife a useful article of furniture. The doors are beautifully proportioned, with ovolo molding. Made in oak and birch. Sold through all dealers in Curtis Woodwork.

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Forever...

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NOW—today—tomorrow—*forever*... the Douglas Fir forest of the West Coast will supply the demand of American architects for strong, beautiful woods with which to build and embellish American homes.

Choice Douglas Fir lumber from this virgin forest is ready for the homes you are designing today—strong, light, durable dimension for framing; finely grained, evenly textured wood for interiors; wide, clear boards, siding and clean-cut mouldings for exteriors; wear-resisting flooring; tasteful doors and pattern-grain panels.

Douglas Fir, America's finest soft-wood, has three valuable forest associates: West Coast (Sitka) Spruce, West Coast Hemlock and Western Red Cedar.

West Coast (Sitka) Spruce, highly prized for fine musical instruments and for airplanes, is available for home-building as a smoothly textured non-warping wood at prices that are surprisingly moderate.

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A beautifully illustrated booklet telling about these choice western woods will be mailed to you at once upon request. Send for it today. *Address* West Coast Lumber Bureau, 5560CC Stuart Building, Seattle, Washington.

"... these rose to fairest proportion by the life that was in them, and blossomed into foliated capitals three hundred feet overhead ..."
—CANOE AND SADDLE by Theodore Winthrop, who explored the Douglas Fir forests in 1853.
Photos by Cress, Seattle.

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Thus, another beautiful building and another unqualified endorsement are added to the ever growing proof of Sol-Lux superiority.



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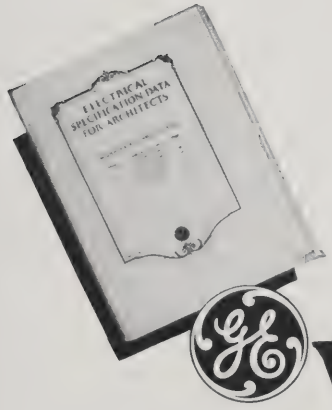
One of the G-E Wiring System ads that are teaching the public to demand quality wiring.



In specifying a G-E Wiring System, the architect has ample scope for his own taste and judgment in planning. And at the same time, he wins the instant recognition of his client for the *one* wiring installation that is known and demanded.

Have you "Electrical Specification Data for Architects" in your files? If not, write us for your copy.

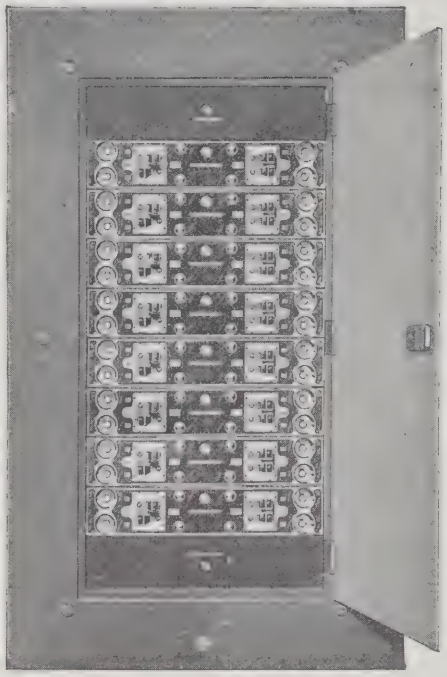
Merchandise Department
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GENERAL ELECTRIC

The Ⓕ Type "NTP" Panelboard is shown at right. There is a type for every demand and specification.



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Panelboards

Because of their unquestionable merit and prestige, won throughout many years of good service, you may always base your panelboard opinion upon Ⓕ! This is the Panelboard all men who build acclaims "The Sign of a Better Job". It is the original molded section safety type. It is standardized throughout and built of oversize parts to guarantee oversize service. Specify Ⓕ Panelboards on your next job—they will mean a saving!

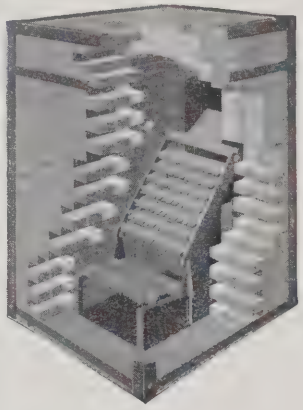
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RELIABILITY rises in value the farther you get from your source of supply. Your specifications grow more specific for products enjoying your confidence.

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Into that situation goes "OLD RELIABLE"—into two of the finer new buildings in Sydney, Australia . . . A switch well known to "stand on its own" for more than a generation.

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Makers of Electric Switches since 1890



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Maple, Beech and Birch are the beauties of the woods—any one who has ever strolled through the groves in which they stand knows their friendliness and charm.

Sunshine and rain and wind in the northern woods give them hard, close grains and tough, compact fibres. When the wood is "ripe" for flooring, then they are manufactured into choice flooring by the members of this Association.

The architect and the home builder find them the most acceptable floorings. Maple, with its delicate but lasting glints of brown and gold, is as durable as it is handsome.

Beech and *Birch*, with their unusual adaptability to color-staining and their genial acceptance of waxing or varnishing, provide a floor surface that harmonizes with any scheme of decoration and furnishing.

Sides and ends perfectly matched, that create an unbroken area of a clear pleasing floor. These floors can be laid over your old floors—bringing the quiet friendliness of the forest into the home, large or small, where they are used.

Our Service and Research Department is a clearing house for accurate information about the utility and characteristics of Maple, Beech and Birch flooring. This information is freely given to any user of **MFMA** flooring. Let us assist you with your flooring problems.

Any or all of the following booklets will be sent to you free upon request.

- ☐ *Color Harmony in Floors.*
- ☐ *The Floors for Your Home.*
- ☐ *How to Lay and Finish Maple, Beech and Birch Floors.*
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1057 Stock Exchange Building, *Chicago*

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The letters **MFMA** on Maple, Beech or Birch flooring signify that the flooring is standardized and guaranteed by the Maple Flooring Manufacturers Association, whose members must attain and maintain the highest standards of manufacture and adhere to manufacturing and grading rules which economically conserve these remarkable woods. This trademark is for your protection. Look for it on the flooring you use.

MFMA

Floor *with* Maple
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SAFE ATTRACTIVE

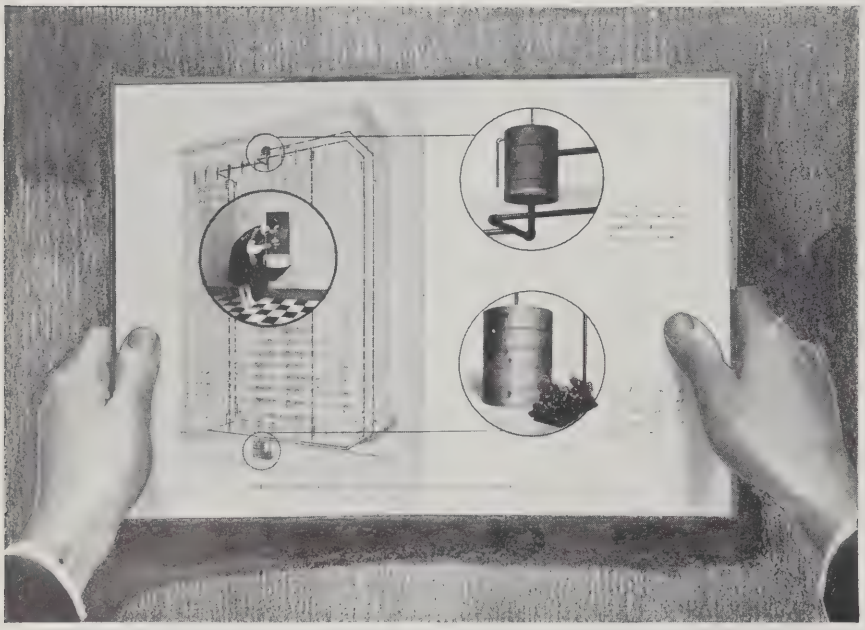
Here is still another method of combining safety with attractiveness. Each tread of the lobby stairways in the Jeffrey Theater, Chicago, has a slip-proof nosing insert of Alundum Aggregates. The colors of the marble chips and the Alundum Aggregates were so selected as to secure a pleasing contrast between the insert and the art marble of the remainder of the tread.

William P. Doerr, architect. Art marble treads with Alundum Aggregate inserts made and installed by Chicago Art Marble Company, Chicago, Norton Licensee.

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Alundum Tiles, Treads & Aggregates

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Circulating Ice Water---an essential feature of the modern building



Send for this Valuable Hand Book on the Design of Refrigerated Drinking Water Systems

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This new publication contains complete information on the design and installation of refrigerated drinking water systems in all types of buildings—office, hotel, mill, hospital, public, etc.—and is based on data collected by the Engineering Department of the Armstrong Cork & Insulation Company over a period of 20 years. The data, drawings, and specifications in this book, not available elsewhere in printed form, make it particularly valuable for architects' use.

A copy of *Refrigerated Drinking Water* will be furnished on request.

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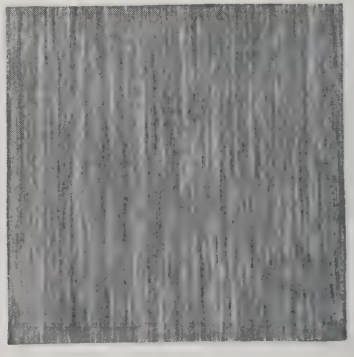
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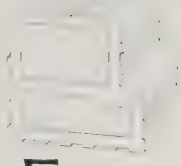
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Volume XLVI THE ARCHITECTURAL FORUM Number 2

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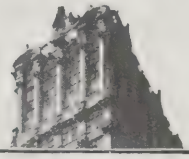
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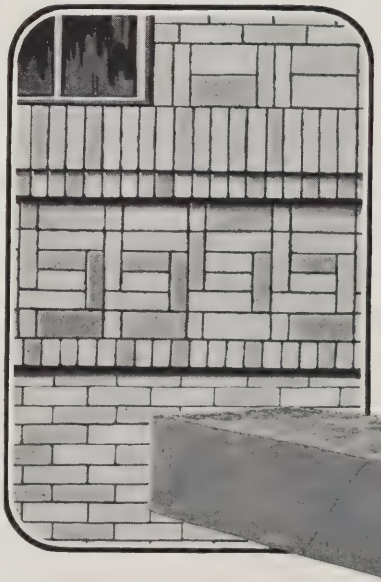
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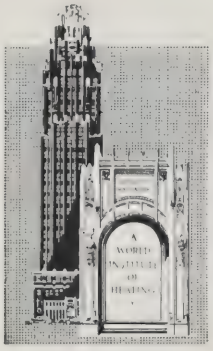
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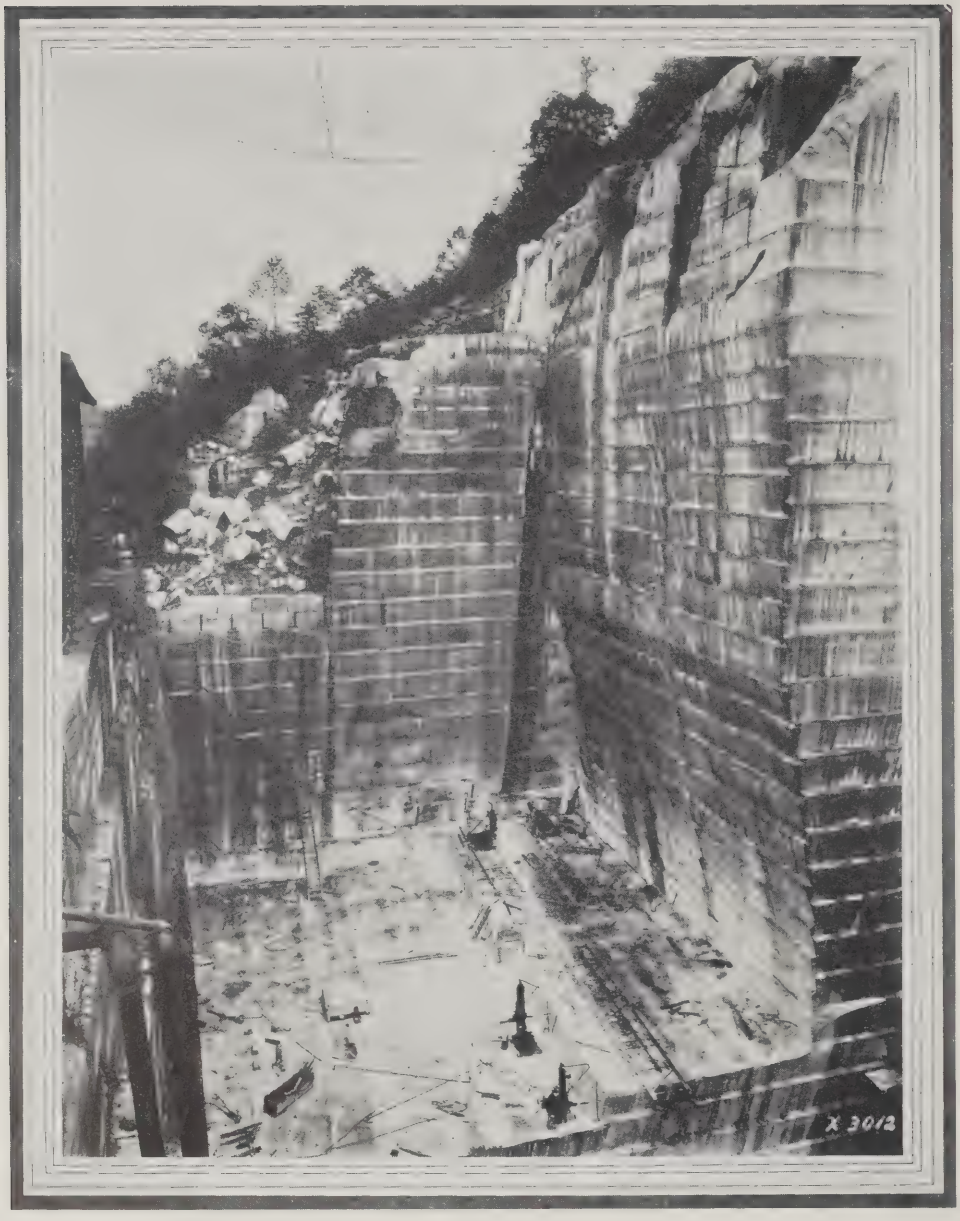
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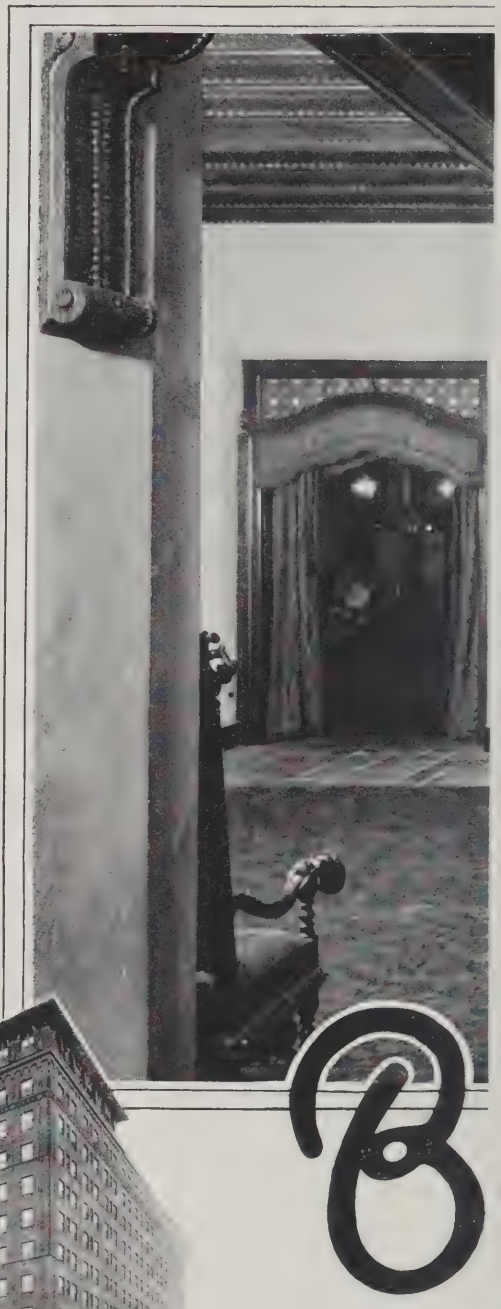
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THIRTY-SIX YEARS IN THE ART OF BRICKMAKING

BOOK DEPARTMENT

NEW ORLEANS is sometimes referred to in certain guide books and newspaper advertisements as "The City Which Care Forgot," a description which if not precisely exact is at least sufficiently true to justify its use. As in every American city, however, progress is slowly but surely accomplishing its insidious work; the old and beautiful is gradually giving way, and in its place is rising the commonplace,—the towering structures of steel enclosed with brick or terra cotta, which would be quite as much at home in Pittsburgh or Topeka, and which reduce all American cities to so much the same dead level of appearance that Portland, Maine might easily be mistaken at first sight for Portland, Oregon. In other words, New Orleans is being "ruined by improvements," and its individuality destroyed.

As every visitor to the city knows, Canal Street divides New Orleans into two quite different worlds. To the left, as one walks up its broad width, there exists the modern or "American" quarter,—brisk and banal, and priding itself on its successful emulation of say Omaha or Kansas City. Upon the right lies what is left of the old French or Spanish quarter, centering upon Jackson Square (*"Place d'Armes"*) upon which face the historic and venerable St. Louis Cathedral and the almost equally venerable Pontalba Buildings, while upon the fourth side the old French Market spreads its length and breadth between the Square and the muddy, turbulent Mississippi, from which (alas!) the old-time river "steamboats" have all but vanished. Upon the streets which surround the Square,—Chartres, St. Louis, Bourbon, Royal, Conti, and the rest,—face such of the old buildings,—unmistakably French,—as time has spared, their grave and reticent facades relieved by lace-like grilles, window guards or balcony rails of iron, often with the monograms of their original owners made parts of their patterns. Through open doors or gates the passerby may catch fleeting glimpses of gardens or courtyards tucked away behind the buildings and gay with banana and orange trees, magnolias and oleanders.

In this beautiful volume the utmost is made of this romance and charm. One rather regrets that Mr. Genthe with his trusty camera did not arrive in New Orleans before the destruction by fire of the French Opera House and that by the house wreckers of the Hotel Royal, also known as the Hotel St. Louis,—but one may well be thankful that he has preserved in the form of illustration much which must follow them into oblivion.

There are not left in America many places where it

PROVINCIAL HOUSES IN SPAIN

By Arthur Byne & Mildred Stapley

ARCHITECTS value Spanish types of domestic architecture because of their simplicity of design and plan and also because they are easily developed in materials inexpensive and easily had. Spain offers a choice of several kinds of residence architecture, types sufficiently different from one another to afford considerable range of selection, yet all possessing the same strength and virility, the excellent lines, the same graceful but unaffected grouping, and the discriminating use of detail which renders distinguished so many Spanish domestic buildings.

Houses in various parts of the Spanish peninsula, particularly the buildings of medium size in rural districts or provincial towns, offer excellent precedent for use in different parts of America where climate conditions are about what prevail in the provinces of Spain.



IN this volume two well known writers on Spanish architecture and decoration review the various forms which are given to the small or medium sized house in Spain. To render the work as helpful as possible to architects, the authors have included many plans and drawings of different kinds, details of such exterior parts of buildings as friezes, cornices, windows, timber overhangs, soffits and balconies, or of such interior parts of the structure as ceilings, fireplaces, doors and stairways. Part of the work deals with the tiles, pottery, ironwork, plaster in relief and the other forms of craftsmanship which contribute so much to the excellence of domestic architecture in Spain. It is a work likely to be invaluable to the designer.

The book contains text and 190 plates 12½x16 inches, and is bound in cloth. Price $25, postpaid.

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SEVEN hundred illustrations deal with every department of the house,—entrance porches, vestibules and halls; reception and living rooms; libraries, dining rooms and kitchens; stairways; bedrooms and bathrooms; verandas and terraces, all these illustrations presenting the most perfectly planned and beautifully arranged examples, the greater part of which are of distinctly moderate cost. Other departments deal with color schemes of which a great many are suggested; with accessories, such as bookcases and built-in bookshelves; lamps and lamp shades; mirrors and other details of furnishing; and one section is given up to illustrations and text which make entirely plain the types of furniture of the different historic periods.

It would be impossible to over-emphasize the value of this work to anyone interested in its subject.

223 pages. 9¾ x 12¾ inches. Price $5.

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is now possible to trace in existing buildings evidences of the successive periods through which a city has passed. While there are left in New Orleans few if any of the original structures built when the city was founded by Bienville in 1718, buildings of the immediately following French and Spanish periods are still fairly numerous, and it is these which are the most interesting to the visitor architecturally inclined. Many also are the relics of the "Greek Revival" type which prevailed in Louisiana during all of that rich and opulent period which preceded the Civil War. Few of these old places, however, are still in the hands of the families of their original owners; most of the old buildings could tell of the rise and fall of proud families as well as of the passing of the popularity of types of architecture! An interesting foreword by Miss Grace King, well known for her writings on New Orleans and its history, leads one to hope that awakened and enlightened public spirit and coöperation of historical societies may bring about the proper restoration as well as the preservation of these relics of a colorful, romantic past.

The illustrations, which naturally form the most important part of the volume, are selected with considerable care and taste and with due appreciation of their architectural value. One familiar with New Orleans will recognize many a friendly old building in the French quarter, one or two on Prytania Street, in the newer portion of the city, and it is pleasant indeed to find one or two illustrations of that fine old homestead in the American quarter, its ample grounds in the heart of the city enclosed by a high wall, which years ago became the home of Newcomb College, an institution for women.

IMPRESSIONS OF OLD NEW ORLEANS. By Arnold Genthe. Text and 101 Plates, 8½ x 11 ins. Price $5 Net. George H. Doran Company, 244 Madison Avenue, New York.

PRACTICAL STRUCTURAL DESIGN IN TIMBER, STEEL AND CONCRETE. Third Edition. By Ernest McCullough. 416 pp., 5¾ x 8½ ins. Price $4 Net. Scientific Book Corporation.

PROGRESS being made in construction of any type is so rapid and improvements come so frequently that even the most carefully prepared works on the subject must be occasionally revised or re-written if their teachings are to be kept in harmony with current practice. Mr. McCullough, the author of this work which now appears in a third edition, has been highly successful in a field of work which is much needed in the world today. "The writer has held for years that 95 per cent of the work done in the design of structures could be explained to men whose knowledge of mathematics does not extend beyond that taught in high schools. The calculus is a valuable tool for those men who can handle it, when and if a problem arises in which it may be used advantageously. For years in the intervals of a busy professional life he managed to find time to teach in evening schools men who entered the offices of architects, engineers and contractors at too early an age. For the same class of men he wrote articles for vocational magazines. He also prepared numbers of draftsmen to take examinations in building design in order to receive licenses to practice architecture. That so many of his former students succeeded in the practice of structural engineering prompted him to collect his material and put it in book form." The work is of course highly valuable.



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LAND PLANNING IN THE UNITED STATES FOR THE CITY, STATE AND NATION. By Harlean James. 427 pp., 5 x 7¾ ins. Price $5. The Macmillan Company, New York.

COMMENT is frequently made on the reckless waste which is characteristic of Americans and America. In many a family food is wasted in quantities which would feed one if not two families in any other country, while the waste in any restaurant in America is amazing. There is probably no instance on record which offers comparison with the waste involved in the exploitation of American forests, and now warning is being sounded of the approaching exhaustion of our supplies of minerals and oils,—exhaustion due in no small measure to waste. Almost as amazing, though it has not attracted quite the same attention, is the waste involved in impairing the fertility of the soil by unwise agricultural methods.

"The present volume is an inquiry into the best use and conservation of our urban and rural land areas. Planning may be regarded as the heart of our agricultural as well as of our urban land problems. Prudent utilization of all our natural resources is not possible unless planning extends to all the other forms of the utilization of land, and this means that our mineral resources, water resources and forests must be planned for both the present and for the future. In other words, conservation is a problem of planning. Practice in our own country is very generally broadening its scope so as to take in the utilization of various classes of land. City planning is now making way for regional planning, or, perhaps, one should say, is becoming part and parcel of regional planning. It is quite evident that the regions surrounding an incorporated city are closely tied to it, even before they gradually become united to it legally. The metropolitan areas must be planned out carefully if we are to have the kind of cities we desire, and the earlier the planning the larger the results accomplished with given expenditures.

"But many yet do not see that agricultural prosperity, and consequently the prosperity of the country as a whole, depend upon the planned-out utilization of agricultural land. Moreover, the utilization of agricultural land cannot be well planned unless agriculture is considered in its relations to utilization of land for forests, for recreational purposes, for urban purposes and all other possible uses. The troubles of the farmers now are essentially due to the fact that we have not had wise planning in the utilization of land. A great deal of land that should be producing crops of trees is now producing other kinds of crops and very generally at a loss, because the land is poor land for agricultural purposes. We have the further result that food at high cost is dumped on the market and produces the phenomenon of a surplus that is disturbing us economically and politically. It is only as we make a synthesis, taking in the planning of land as a whole, that we can have the foundation of the highest attainable economic prosperity. Miss James' work as Executive Secretary of the American Civic Association is well known, and her articles have attracted widespread and deserved attention. She has in her own thinking and in the title of this book kept pace with the development of land planning. At first the book was conceived of as a book on city planning but has now become 'Land Planning in the United States for the City, State and Nation.' It thus performs a useful function in instruction and in blazing a trail for others to follow."

GRADE SCHOOL BUILDINGS; BOOK II

IN no department of architecture have the last ten years seen quite the progress which has been made with schoolhouses, a class of buildings of the first importance, since they exert a strong influence upon their communities, and by their architectural excellence or the lack of excellence they elevate or lower the architectural standards of entire districts. Study of school structures, particularly at the hands of a group of well known architects, has resulted in their being given a high degree of architectural distinction and dignity in the way of design, while study directed toward their planning and equipment has led to their being practical and convenient far beyond what was regarded as an advanced standard of efficiency even a few years ago.



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VOLUME XLVI — *Established 1892* — NUMBER 2

CONTENTS *for* FEBRUARY 1927

PLATE ILLUSTRATIONS	Architect	Plate
Elks' Building, Los Angeles	*Curlett & Beelman*	17-22
Mellon Building, Choate School	*E. P. Mellon*	23, 24
House of C. L. Hay, Esq., Newbury, N. H.	*Prentice Sanger*	25-32
The Forum Studies of European Precedents (Plates 57-64)		

LETTERPRESS	Author	Page
Cover Design: A Loggia at Viterbo *From a Drawing by Louis C. Rosenberg*		
The Editor's Forum		65
A Quiet Corner at St. Malo *From a Crayon Sketch by Otto F. Langmann*		*Frontispiece*
House of J. Scott Parrish, Esq., Richmond, Va. *H. S. Gillespie; William Lawrence Bottomley, Architect*		105
Mellon Building, Choate School	*E. P. Mellon, Architect*	129
1927 to Be Another Active Year for Architects	*C. Stanley Taylor*	149
Plant for Kelly Press Division, American Type Founders Co.	*Walter H. Lewis*	169
	Day & Klauder, Architects; Day & Zimmermann, Inc., Engineers	
The Architects' Forum "Some Observations on Commercial Architecture"		176
Show Windows and Shop Fronts	*Leigh French, Jr.*	177
Wheeler-Beecher House, Bethany, Conn.	*Myron Bement Smith*	193

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THE EDITOR'S FORUM

ARCHITECTURAL LEAGUE HONORS

FOR some years it has been the custom to award, at each annual exhibition of the Architectural League of New York, a gold medal in architecture, one in mural painting, one in sculpture, and one in landscape architecture, and the by-laws have provided that each recipient of a gold medal award shall subsequently be considered *hors concours,* or ineligible for a further gold medal award. Believing that this rule operates against the League's exhibitions, in that gold medalists are inclined to sit on the side lines, so to speak, and watch others send in to the exhibitions their best work, the members on January 6 changed the by-laws so that any architect may win the gold medal as often as his exhibited work shall be deemed worthy of such award. It was also stipulated in the changed by-laws that the award shall be made only in recognition of work which is actually on view in a League exhibition. It was pointed out that the New York Chapter of the A. I. A. awards a gold medal each year to an architect in recognition of his ability, his executed work and his standing in his profession. The League, desirous of doing whatever can be done to keep on the highest plane the quality of work which is exhibited, believes that this change will spur former gold medalists to send in their best work.

Another change of considerable importance was the addition of two silver medals and two honorable mentions. The new by-law provides that these shall be "available." This means that the jury may award two silver medals and two honorable mentions if the exhibited work is good enough to merit such awards. The by-law further provides that one silver medal and one honorable mention shall be awarded for "intimate" work, such as residences, shops, country clubs, etc., and the remaining silver medal and honorable mention for monumental or public buildings which might be classed as "general" in contradistinction to "intimate." The gold medal is to be awarded to the best design in the exhibition, and such design may be either in the intimate or the general class. Because these changes are important departures from long established custom and therefore somewhat experimental in nature, it was thought best not to urge the painters, sculptors and landscape architects to follow suit until there shall have been time to observe the way these changes affect the architectural portions of the exhibitions.

Another slight change is in the method of determining who shall serve on juries of award. Heretofore the architectural sections of these juries have been chosen from lists of six names submitted to the Executive Committee of the League by the New York Chapter of the A. I. A. This method of selection was agreed upon some years ago when the only gold medal award at the annual exhibition was presented by the New York Chapter of the Institute. It was quite logical that this Chapter should nominate six architects with the understanding that the League would choose three out of the six for the jury. Now, however, when the gold medal is entirely a League affair, it is thought best, in view of the very large number of architects in the membership, to have the architect members of a jury selected by the Executive Committee of the League. This change was made without affecting the present mode of securing painters, sculptors and landscape architects for the juries which make the awards.

That alteration in the by-laws which aroused an even greater interest than was manifested in the changes already described was made in an effort to secure recognition for the designers of works of architecture when the medal awards are made. After a lively debate, in which it was asserted by those who did not think that the proposed by-law went far enough that it was the finest thing which had ever been proposed in the history of the League, an agreement was reached. The new by-law provides that after an award is voted by the jury, the firm or corporation in whose name the award is made shall be promptly informed concerning the award and shall be given the opportunity of designating the man in the employ of the firm or corporation who is chiefly responsible for the design of the honored building. If it should happen to be a member of the firm, it would doubtless be a simple process to determine who should receive the medal. But the by-law is designed to reward the talented designer whose identity often is submerged in a large office.

A COURSE IN CONSTRUCTION AT M. I. T.

A COURSE in building construction, planned to develop professional builders with a broad training in building operations, including business and engineering administration, has been established at Massachusetts Institute of Technology and will be begun in the second term in February. The course was founded by Louis J. Horowitz, President of the Thompson-Starrett Company of New York, through the Louis J. and Mary E. Horowitz Foundation.

Ross F. Tucker, a graduate of Technology in the Class of 1892, and until recently a member of the construction staff of the Thompson-Starrett Company in New York and Philadelphia, has been appointed to take charge. The new course, which is designed to qualify men for the building profession, leads to reception of the degree of Bachelor of Science.



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The
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Volume XLVI FEBRUARY 1927 Number 2

House of J. Scott Parrish, Richmond, Va.

WILLIAM LAWRENCE BOTTOMLEY, Architect

By H. S. GILLESPIE

NOT always does the American home of European derivation live up to its fair name when transplanted to our native soil, not from any fault of its own, but rather because of a lack of finesse in making the adjustment and the consequent loss of that allusive quality on which so much of its success depends. For this reason the new home of J. Scott Parrish, of Richmond, Va., a modern adaptation of the Italian by William Lawrence Bottomley, stands out strikingly, for not only has the architect caught the charm of this romantic continental type but he has embodied the more intimate character of the Tuscan villa in the composition. By countless suggestions of structural import and colorful drift he has evolved a house that brings to its compact city site the grace and bloom that time has imparted to those incomparably lovely homes of Italy. And, though employing the most direct means to gain his ends, he has handled his materials in playful mood and given vivacity and animation to a design that is absorbingly interesting. His impressionistic use of color, so potent a factor in the naïve individuality of the Italian dwelling, has enabled him to achieve in this instance a pictorial similarity as well.

The stucco walls, shot through with a diversity of colorful hues, suggest more than all else the warmth of a ripe apricot. Soft gray limestone takes the place of the native *pietro serena*. The sash of the main facade are stained the mellow brown of Italian walnut, and in the other elevations they rejoice in gay colonial blue. The shutters with fixed louvers are of a modified marine blue, while the entire scheme is offset by the more spectacular blue of the wooden gates at the entrance to the drive,—the intense, vibrant color of the Italian skies. So adroitly has Mr. Bottomley blended all these harmonious elements together,—along with the appropriate accessories of planting, such as tall conifers and a host of deciduous shrubs embracing in the selection *ilex crenata*, boxwood, laurel, rhododendron and orange trees with their glossy green foliage,—as to form a veritable harmony of form and color. Incidentally, it is this rhythmic quality of Mr. Bottomley's work, as essential to a successful architectural composition as to work in music or painting, that lends it what seem to be its peculiar distinction and charm.

Mrs. Parrish at the start had in mind a house planned along the lines of the "Southern Colonial" until Mr. Bottomley drew an inviting picture reminiscent of the villas of Tuscany but adapted to suit the needs of modern living. Viewing the mental image in the light of her own artistic perceptions, she succumbed at once to its appeal and lent her enthusiastic consent to the change,—and what is of equal moment to the architect, she has since seen no reason to regret her decision now that the house is built.

The site selected, a plot 65 by 150 feet, in one of the best sections of Richmond, seemed absurdly small for the purpose, but the ease with which the architect solved his problem may be determined by the success of the finished product. Set a little back from the street, the grounds enclosed by the typical stone balustrade and garden wall, the Parrish house, despite the limitations of space, epitomizes the elusive beauty and romantic quality of the sixteenth century Italian villa. Not a little of its native tone is supplied by the picturesque wall, so suggestive of the proverbial inclusiveness of Italian home life, where privacy and seclusion are the most important considerations. A round arched, battened door on the right opens to an informal flagstone path leading to the main entrance. On the left the nail-studded blue gates with imposing stucco piers capped by ornamental stone capitals and finials give admission to the driveway that makes its way past a screen of cedars to the garage at the extreme rear. Each facade is given a lively variety of expression in harmony with the spirit of the design, but the main elevation, dominated by the entrance, is quite naturally the most imposing. Framed in classic pilasters with the unbroken pediment of the late Renaissance, the doorway as the main central motif is framed on either side by narrow windows protected by the stout grilles customarily seen in houses of this character. The delicate lacelike lunette of wrought iron over the door and the graceful rail in the window group above, fashioned in the spirit of the famous ironworkers of Italy, lend emphasis to their beauty.

By way of a spacious vestibule, with coat rooms opening off, the main foyer is reached. Rough fin-

ished walls in apricot and a floor of travertine inset with blocks of black marble supply a setting that brings out the fine proportions of the staircase. Of free-standing construction, its graceful curves give it remarkable lightness and buoyancy, an effect that is augmented by delicate balusters of wrought iron, spaced very far apart and threaded through with a crimson velvet rope, as support to those using it.

Three arches that give admission to the formal rooms add a certain dramatic force to the architectural treatment of the foyer and also lend a palatial air to the interior. The house was not built with the idea of entertaining on a vast scale, but the rooms are so arranged as to give complete circulation of floor plan, and their disposition was determined by personal preference as also by the special requirements of a hospitable family with a host of friends. The largest unit of floor area is occupied by the drawing room, a stately apartment running across the entire front of the house and reflecting the same architectural good taste as the foyer, with, quite properly, an infinitely more resplendent decorative scheme. Full of rich and colorful detail, the room possesses an air of great tranquillity and enjoys a



Main Entrance Gateway, House of J. Scott Parrish, Esq., Richmond, Va.
William Lawrence Bottomley, Architect

distinction unusual even in the typical Italian salon.

No feature of the dignified interior plays a more important part in the interior treatment than the ceilings, on which Mr. Bottomley has lavished care and thought. The increasing popularity of various types of European architecture in this country has developed a corresponding appreciation for ceilings of a harmonious character, and while the beamed and plaster ceilings of English origin still have their own place, we are today indebted to Italian sources for some of our most sumptuous examples. Most of the ceilings in the Parrish house follow the spirit of noble examples. Each is a gem of fine woodcraft, and their textural quality and mellow color go far toward supplying the indefinable feeling of age in new work. The ceiling in the drawing room, of Italian walnut, is most impressive, the design centering in a great octagonal motif in blue imposed on a rectangular panel of dull red, surrounded by smaller motifs of the same sort, all traced over with faint arabesques of gold, and crossed at intervals by heavy beams which in turn are upheld by carved corbels.

Against walls of soft pumpkin yellow and gray, gold damask draperies hang from beneath valance



Main Facade, House of J. Scott Parrish, Esq., Richmond, Va.
William Lawrence Bottomley, Architect



DINING ROOM



MANTEL IN DRAWING ROOM

HOUSE OF J. SCOTT PARRISH, ESQ., RICHMOND, VA.

WILLIAM LAWRENCE BOTTOMLEY, ARCHITECT



FIREPLACE IN STUDY



DRAWING ROOM

HOUSE OF J. SCOTT PARRISH, ESQ., RICHMOND, VA.

WILLIAM LAWRENCE BOTTOMLEY, ARCHITECT



GARDEN FACADE

HOUSE OF J. SCOTT PARRISH, ESQ., RICHMOND, VA.

WILLIAM LAWRENCE BOTTOMLEY, ARCHITECT



MAIN ENTRANCE
HOUSE OF J. SCOTT PARRISH, ESQ., RICHMOND, VA.
WILLIAM LAWRENCE BOTTOMLEY, ARCHITECT

boards, and old Italian furniture strikes a note of fine contrast. While the fireplace is usually the keynote of a room, it is less important as a controlling factor in the decorative scheme in this instance. The classic chimneypiece is flanked by recessed bookcases of walnut lined with dull terra cotta, but except for two panels painted in the eighteenth century manner either side the door to the foyer, the walls depend upon their own rich finish for ornament. Although the effect of the paintings is to break up the plain wall surfaces, they were introduced for another reason, for one conceals a secret door, so arranged to give convenient access to the hall, on occasions.

Marked by dignity befitting its character, the library adjoining is also noted for a remarkably handsome ceiling in carved walnut and gold, a replica of an example in the *Academia dei Belliarte* in Rome, while the floor of hexagonal tile with insets of Gothic symbols is a copy of that in the Palace of the Popes at Avignon. Through a broad archway is the dining room, lighted by many tall casement windows, three of them opening onto a 30-foot terrace paved with red tile. Vigorous ceiling treatment is again to be noted here, the style resembling somewhat the famous model in the Davanzati Palace, with closely set rafters of Italian walnut, crossed at intervals by girders, which in turn are supported by heavy corbels.

Particularly successful is the ceiling in the dining room done in an alluring blue-green. Its interesting effect was produced by floating a soft gray-blue over emerald green, then spraying it over with *quercio,* the brown of Italian walnut, producing an iridescent tone with play of light and shade over the surface at the windows. There are hangings of a golden, rough-textured satin that harmonizes with the sturdy refectory table, the high backed eighteenth century chairs covered with blue brocade, the 1630 credenza used as a sideboard, and the other furnishings. Here, as elsewhere, individually designed lighting fixtures in wrought iron, following Italian precedents are used, valuable adjuncts to the setting.

The remainder of the first floor is given over to the service wing, Mrs. Parrish's rooms are over the dining room, looking out upon the pool and garden. Both Mr. Parrish and Miss Parrish have suites adjoining, and the third floor is given over to maids' and servants' quarters, with the usual accompaniment of trunk room, trunk lift, and linen rooms.

The walls of both the garage and the service wing are treated in decorative fashion with trellises covered with vines and embellished with architectural motifs, including a wall fountain, while the long pool is bordered about by box and encircled by a flagstone pathway, and there are parterres of old fashioned flowers to mingle their hues and perfume with the spicy odor of citrus shrubs and the scent of box.

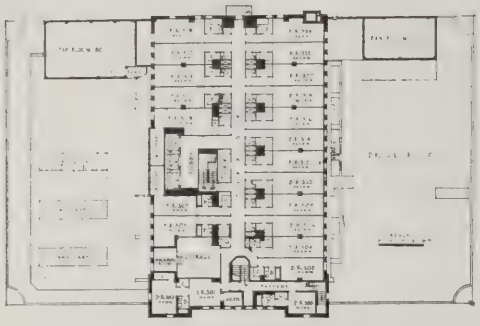


Garden Pool, House of J. Scott Parrish, Esq., Richmond, Va.
William Lawrence Bottomley, Architect

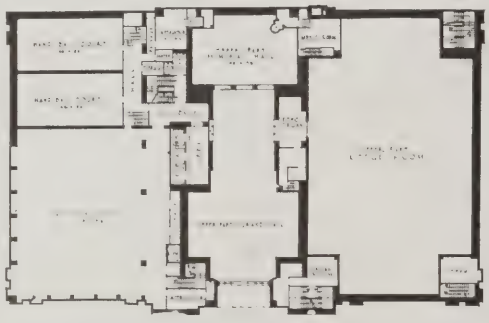
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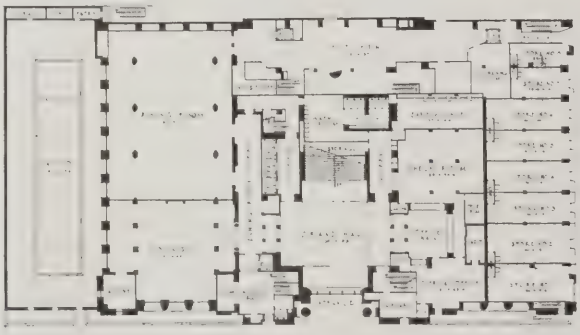
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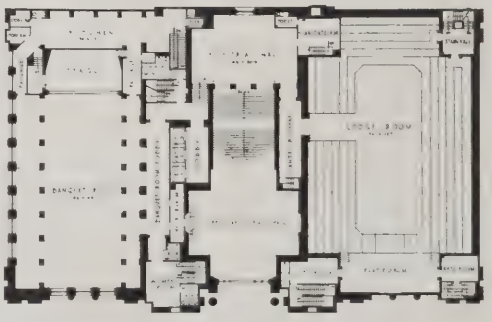
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ELKS' BUILDING, LOS ANGELES
CURLETT & BEELMAN, ARCHITECTS



LODGE ROOM
ELKS' BUILDING, LOS ANGELES
CURLETT & BEELMAN, ARCHITECTS



FOYER LOOKING TOWARD LOUNGE
ELKS' BUILDING, LOS ANGELES
CURLETT & BEELMAN, ARCHITECTS



THE LOUNGE



MAIN DINING ROOM

ELKS' BUILDING, LOS ANGELES

CURLETT & BEELMAN, ARCHITECTS



VIEW OF LOUNGE



MEMORIAL HALL

ELKS' BUILDING, LOS ANGELES
CURLETT & BEELMAN, ARCHITECTS



MELLON BUILDING, CHOATE SCHOOL
E. P. MELLON, ARCHITECT



ENTRANCE, MELLON BUILDING, CHOATE SCHOOL

E. P. MELLON, ARCHITECT

The Mellon Building, Choate School

E. P. MELLON, Architect

THE campus of the Choate School lends itself admirably to use of the Colonial type of architecture, and the grounds are so arranged by nature that they form an immense bowl surrounded by hills. The athletic fields and masters' houses are located irregularly throughout the bowl, to the south of which stands Mr. Cram's recently completed and beautiful chapel, a great work of a great master. The entire grounds are splendidly planted, with magnificent elms predominating. On the hills to the west of the campus stand the administration building, class buildings and dormitories. It was decided to place the new building, the gift of Andrew W. Mellon, on the highest part of this ridge, which gives it a commanding view of the entire campus and surrounding country. It was required of the architect that the building should express the best traditions of New England architecture, and should particularly express the fundamentals of classical Georgian which had been adapted in early American days to New England Colonial. At the same time it was required that the structure, both externally and internally, show a restrained classical treatment.

For convenience, it was necessary to connect the Mellon Building with the main administration building, or "Hill House." This has been done by an arcade, which though entirely separating the two buildings gives the required appearance of unity, and also partly encloses a large open and well planted court. The materials of which the structure is built are as far as possible those produced in Connecticut. The bricks were locally made and have much the appearance of old fashioned bricks formed by hand. The building, it will be noted, is built in the shape of a T. The cupola is placed at the crossing, and as one of the arms is very long, it was necessary to make the cupola sufficiently high to be seen from all points to emphasize the importance of the structure.

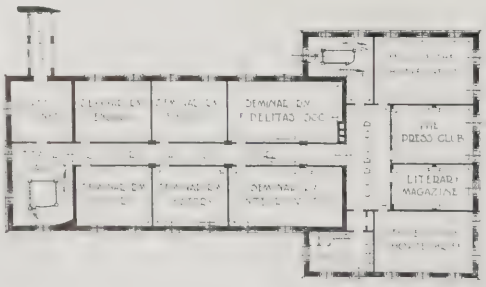
The main floor of the building contains a large entrance hallway with the staircase at one end. The door leading into a large room 43 by 80 feet is directly ahead as one enters. This room was planned as a comfortable, homelike lounging and reading room, as the head master wishes to give to his students as much as possible of a home atmosphere. This room opens into the secondary room, which is, more strictly speaking, the library, and is intended for reading and studying and contains 13 large windows. The woodwork and details of these two rooms are more or less similar, and particularly in the library the colors have been kept subdued in order that there will be nothing to prevent serious study. On the basement floor are a large room for the masters and several rooms for press and editorial work in connection with the *Choate News*. On the second floor are several large, light and airy class or seminar rooms, which are finished and furnished in the simplest manner, and on the upper floor are dormitories and bedrooms. The furnishing and interior decorating of the entire structure, which is the work of Harriet Day Parsons, contribute largely to the attractiveness and convenience of the building.



East Elevation



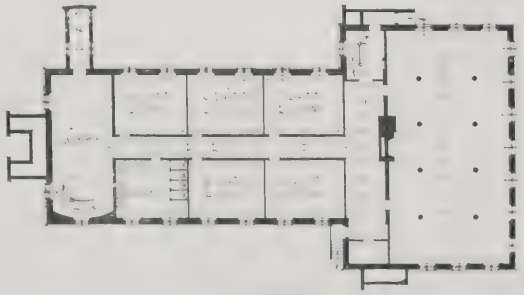
NORTH ELEVATION



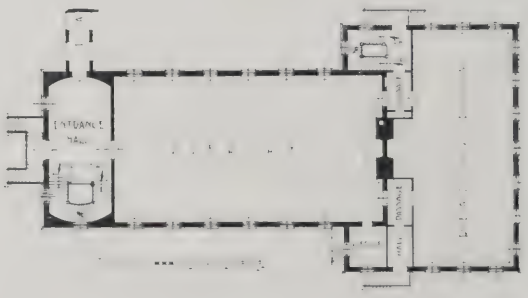
SECOND FLOOR



THIRD FLOOR



BASEMENT



MAIN FLOOR

MELLON BUILDING, CHOATE SCHOOL

E. P. MELLON, ARCHITECT



ARCADED PASSAGEWAY



LIBRARY

MELLON BUILDING, CHOATE SCHOOL

E. P. MELLON, ARCHITECT



MANTEL IN READING ROOM



MANTEL IN LIBRARY

MELLON BUILDING, CHOATE SCHOOL

E. P. MELLON, ARCHITECT

The Forum Studies of European Precedents

OLD DOORS IN DIGNE



Entrance with Double Doors

THE doorway has always been a feature of special architectural emphasis, and from its function and position it is altogether appropriate that this should be so. The decoration of the doorway has given endless scope for ingenious imagination and invention on the part of the architect from the earliest times, and it still claims his painstaking efforts. But in our solicitude for the embellishment of the doorway, the actual door itself is too often given little consideration.

These illustrations of late eighteenth and early nineteenth century French doors from Digne supply valuable subject matter for reflection on this score and carry with them not a little valuable suggestion and inspiration. In all the instances shown the treatment of the masonry surrounding the doors is exceedingly simple and severe, and in dealing with the trim the decorative instinct has been rigidly suppressed. With one exception (Plate 60), where wood paneling reminiscent of the manner in fashion during the reign of Louis XV is plainly in evidence, all the doors indicate the more austere conceptions of the neo-Classic epoch. It is interesting to note in more than one of these examples that the architectural features which are commonly carried out in stone or wood and project from the faces of the buildings are here set back within the reveals and are treated as parts and continuations of the actual doors rather than as distinct and separate parts of their enframements. This relationship between the door and its framing is carried out consistently in highly decorative wood paneling. In several cases, indeed, it is not easy to distinguish the line of division between the door and its pseudo frame. The pleasing designs shown carry an element of fresh interest which is of considerable importance to designers.



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DOORWAY WITH PILASTERS AND TRANSOM, DIGNE

The Forum Studies of European Precedents; Plate 58



© *The Architectural Forum*

PILASTERS FORM PART OF DECORATION OF DOOR ITSELF, DIGNE

The Forum Studies of European Precedents; Plate 59



© *The Architectural Forum*

DOUBLE DOORS, WITH PANELING REMINISCENT OF LOUIS XV PERIOD



© *The Architectural Forum*

UNUSUAL DECORATIVE TREATMENT OF TRANSOM, DIGNE

The Forum Studies of European Precedents; Plate 61



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NARROW PILASTERS ARE PART OF DOOR ITSELF, DIGNE

The Forum Studies of European Precedents; Plate 62



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SIMPLE DOORWAY TREATMENT CHARACTERISTIC OF DIGNE

The Forum Studies of European Precedents; Plate 63



© *The Architectural Forum*

ANOTHER EXAMPLE OF A TWO-PANELED DOOR WITH NARROW PILASTERS, DIGNE

The Forum Studies of European Precedents; Plate 64

1927 To be Another Active Year for Architects

By C. STANLEY TAYLOR

ACCORDING to all reports received in connection with the Annual Building Survey and Forecast of THE ARCHITECTURAL FORUM, it is quite apparent that the architects of the United States are to enjoy another active and prosperous year. From all indications, while 1927 will not show as great an expenditure for new buildings as 1926, it is evident that the general demand is for new construction in the better types of buildings, and that a greater proportion of the total expenditure for new building will require architectural supervision than was shown by the records for 1926. In other words, a considerable part of the reduction in the national program will be taken from construction in the cheap, speculative field, which as a rule does not employ architects on an interesting or satisfactory basis The trend is toward better building.

These pages present full details of THE ARCHITECTURAL FORUM's Building Forecast for 1927. It is believed that architects will be definitely interested in this information, which perhaps foreshadows activity in individual offices. The closing figures of the year 1926 show an astounding total national expenditure of well over $6,000,000,000 in new building construction. Including alterations and unrecorded transactions, this total probably measures over $7,000,000,000, thus establishing for the past year an unprecedented record of construction activity and one which probably will be unequaled for many years to come. When the figures were tabulated for 1925, it was felt that that year had probably established a total which might never be equaled, and while the conservative forecasts for 1926 promised another $6,000,000,000 building year, it was not believed by anyone that this figure would be as greatly exceeded as it has been. Similarly, it is difficult to believe that the year 1927 will record as great a national building investment as that of 1926. All indications point to the fact that while 1927 will probably prove to be one of the great years in building history, its total investment in new building construction will be approximately 12 per cent less than in 1926. In other words, the forecast of THE ARCHITECTURAL FORUM, based on an extensive survey as explained in later paragraphs, indicates for 1927 a total of about $6,000,000,000 as opposed to the $7,000,000,000 record of 1926 for the United States.

For several years past, THE ARCHITECTURAL FORUM has carried out a comprehensive survey among architects, obtaining over 2,000 confidential reports of work actually on the boards or confidently expected to reach the contract stage during the following year. Having these actual figures in hand, it has been found possible to apply a series of ratios which have resulted each year in a fairly close approximation of actual figures as ultimately recorded. Primarily, of course, this forecast deals with work carried out through architects' offices, but with the exception of small residential work (houses costing under $10,000) and factory structures, the bulk of the building of this country is controlled by architects. To the figure established by new work there must, of course, be added an estimate covering remodeling and alterations. This is discussed in more detail in later paragraphs. For those who wish to review and compare building activity since 1915, there is shown herewith a graphic chart recording monthly totals of plans filed, contracts let, and the volume of new building as measured in cubic footages. There is shown also an index of building costs which offers an interesting comparison with activity during any period of the past, A study of the building industry in thus possible.

In order that some detailed measure may be had of anticipated building activity during the year 1927, the architects' reports received by THE ARCHITECTURAL FORUM have been correlated and weighted for presentation in the accompanying table which shows the expected activity in 19 types of buildings, allocated to six divisions of the country. This tabulation shows a total of $4,856,817,500, which it is believed represents the approximate value of the new construction which will be planned and carried out in 1927 through architects. In addition to this, there will be several hundred million dollars expended for small residences in suburban and rural districts, only part of which comes within the architect's scope of service, together with a large volume of industrial building and a considerable program of remodeling, a part of which is handled by architects, but which is not recorded in this table. In total, therefore, the forecast for 1927 exceeds $6,000,000,000. It is quite probable that a considerable part of the decrease in building activity in 1927 as compared to that of 1926 will be found in the cutting down of cheap speculative building. From important mortgage money sources it is learned that the constantly growing tendency is to discourage flimsy construction, and the supervision of specifications has been developed to a considerable degree of efficiency as compared to the poor methods of control exercised in past years. Good building is now more general.

Of course, one of the principal reasons for the great volume of building activity during 1926, and as anticipated for 1927, is the demand of the public for better housing of all kinds and for a more modern and attractive environment in which to carry on commercial and institutional activities. We must also take into consideration the rapid establishment of new residential districts (due to transportation improvements) and the growing developing of new business centers in the larger cities,—areas where certain forms of business are becoming concentrated. This tendency is noteworthy not only in New York but in practically all of the larger cities in the country. Coupled with these greatly im-

proved standards of social and commercial housing conditions there is the significant fact that a continued period of prosperity has placed the public in a position to pay for what it wants in the way of new buildings, a condition upon which much depends.

In spite of occasional comments, there appears at present to be no great danger of overbuilding, because after all the building demand of this country is not primarily for space alone, but for space of a satisfactory quality. Here, then, we find conditions which are certainly discouraging from the viewpoint of owners of old buildings, particularly those which physically or because of local conditions are approaching the state of obsolescence. The competition of new buildings will naturally be too great to sustain values in old structures, but it is probable that the new buildings themselves will not suffer materially except in isolated instances where there exists temporary satiation. In certain districts in New York, it may be said that 1926 has seen an overbuilt condition in certain types of buildings, such for instance as in the so-called "garment center" and in the office building situation in the Grand Central zone. While space competition is definitely in view in these districts, it is probable that this condition is likely to last only a year or two, and that all of this modern manufacturing and commercial area will be readily absorbed by developing industrial and commercial needs for space in the near future.

From the architects' viewpoint, one of the most interesting phases of any building forecast is to be found in attempting to measure the change in public demand for new buildings, both as to building types and geographical divisions of the country. The figures of THE ARCHITECTURAL FORUM's forecast have been carefully analyzed in order that a comparison may be made with the public demand for various types of buildings as expressed in January of 1926. The tabulation included shows in detail the change in demand in 19 building types and six divisions of the country, as well as the national total.

A COMPARISON OF PUBLIC DEMAND FOR NEW BUILDINGS AS SHOWN IN 1926 AND 1927

The figures given here apply to projects as reported by architects and represent the percentage of the valuation of each building type as compared with the total value of projects for the district.

UNITED STATES

Type of Building	*Requirements for New Buildings by Percentage 1926*	*1927*	*Change*
Automotive	2.7	2.8	+ .1
Banks	3.3	3.3	
Apartments	10.8	12.5	+1.7
Apartment hotels	3.4	4.3	+ .9
Clubs, fraternal, etc.	4.6	4.3	— .3
Community and memorial	2.7	2.	— .7
Churches	5.1	6.5	+1.4
Dwellings (under $20,000)	4.1	2.4	—1.7
Dwellings ($20,000 to $50,000)	2.3	2.4	+ .1
Dwellings (above $50,000)	1.5	1.9	— .4
Hotels	10.5	6.9	—3.6
Hospitals	5.5	5.6	+ .1
Industrial	8.7	7.3	—1.4
Office buildings	11.9	12.7	+ .8
Public buildings	4.	5.6	+1.6
Schools	12.4	11.7	— .7
Stores	2.2	2.2	
Theaters	3.1	3.9	+ .8
Welfare, Y. M. C. A., etc.	1.2	1.7	+ .5

1927 Prediction by Districts in 19 Building Classifications

BUILDING TYPES	N. EASTERN STATES	N. ATLANTIC STATES	S. EASTERN STATES	S. WESTERN STATES	MIDDLE STATES	WESTERN STATES	U.S.A.
Automotive	$8,605,000	$37,070,000	$8,887,500	$8,735,000	$52,365,000	$21,470,000	$137,132,500
Banks	16,000,000	81,425,000	4,485,000	6,700,000	41,050,000	8,997,500	158,657,500
Apartments	21,757,500	331,602,500	14,500,000	25,317,500	157,047,500	57,775,000	608,000,000
Apartment Hotels	6,337,500	117,362,500	5,562,500	5,675,000	48,150,000	25,150,000	208,237,500
Clubs Fraternal, etc.	11,882,500	62,362,500	9,687,500	12,395,000	73,667,500	37,845,000	207,840,000
Community and Memorial	4,337,500	29,570,000	1,112,500	18,815,000	31,275,000	11,522,500	96,632,500
Churches	39,345,000	99,840,000	12,937,500	35,402,500	90,960,000	36,415,000	314,900,000
Dwellings *(Under $10,000)	8,555,000	40,607,500	7,925,000	12,990,000	31,867,500	13,875,000	115,820,000
Dwellings ($20,000 to $50,000)	7,925,000	39,687,500	6,095,000	11,940,000	38,737,500	12,095,000	116,480,000
Dwellings (Over $50,000)	8,075,000	33,520,000	2,212,500	5,915,000	29,220,000	11,387,500	90,330,000
Hotels	20,970,000	92,442,500	25,762,500	37,725,000	92,950,000	66,917,500	336,767,500
Hospitals	17,850,000	126,937,500	7,850,000	18,465,000	78,222,500	23,622,500	272,947,500
†Industrial	42,362,500	134,205,000	2,415,000	18,555,000	139,455,000	17,797,500	354,790,000
Office Buildings	32,250,000	194,140,000	7,757,500	47,385,000	267,845,000	68,250,000	617,627,500
Public Buildings	28,102,500	102,027,500	6,950,000	10,912,500	65,845,000	56,440,000	270,277,500
Schools	52,900,000	144,950,000	24,770,000	43,325,000	219,080,000	81,215,000	566,240,000
Stores	5,417,500	42,025,000	14,072,500	7,567,500	25,487,500	12,497,500	107,067,500
Theaters	18,637,500	54,747,500	6,995,000	11,012,500	93,367,500	14,892,500	199,652,500
Welfare Y.M.C.A., etc.	7,425,000	24,167,500	4,262,500	4,745,000	30,537,500	6,280,000	77,417,500
TOTAL VALUE OF NEW BUILDINGS	$358,735,000	$1,788,690,000	$174,240,000	$343,577,500	$1,607,130,000	$584,445,000	$4,856,817,500

NORTHEASTERN STATES

Type of Building	Requirements for New Buildings by Percentage 1926	1927	Change
Automotive	5.4	2.5	—2.9
Banks	4.1	4.5	+ .4
Apartments	5.6	6.	+ .4
Apartment hotels	1.9	2.	+ .1
Clubs, fraternal, etc.	3.5	3.	— .5
Community and memorial	4.	1.1	—2.9
Churches	8.8	10.9	+2.1
Dwellings (under $20,000)	2.6	3.	+ .4
Dwellings ($20,000 to $50,000)	2.2	2.	— .2
Dwellings (over $50,000)	1.6	2.	+ .4
Hotels	10.	5.6	—4.4
Hospitals	7.9	4.8	—3.1
Industrial	9.5	11.9	+2.4
Office buildings	8.6	8.9	+ .3
Public buildings	4.1	8.	+3.9
Schools	15.3	15.	— .3
Stores	1.9	1.4	— .5
Theaters	1.7	5.4	+3.7
Welfare, Y. M. C. A., etc.	1.3	2.	+ .7

SOUTHEASTERN STATES

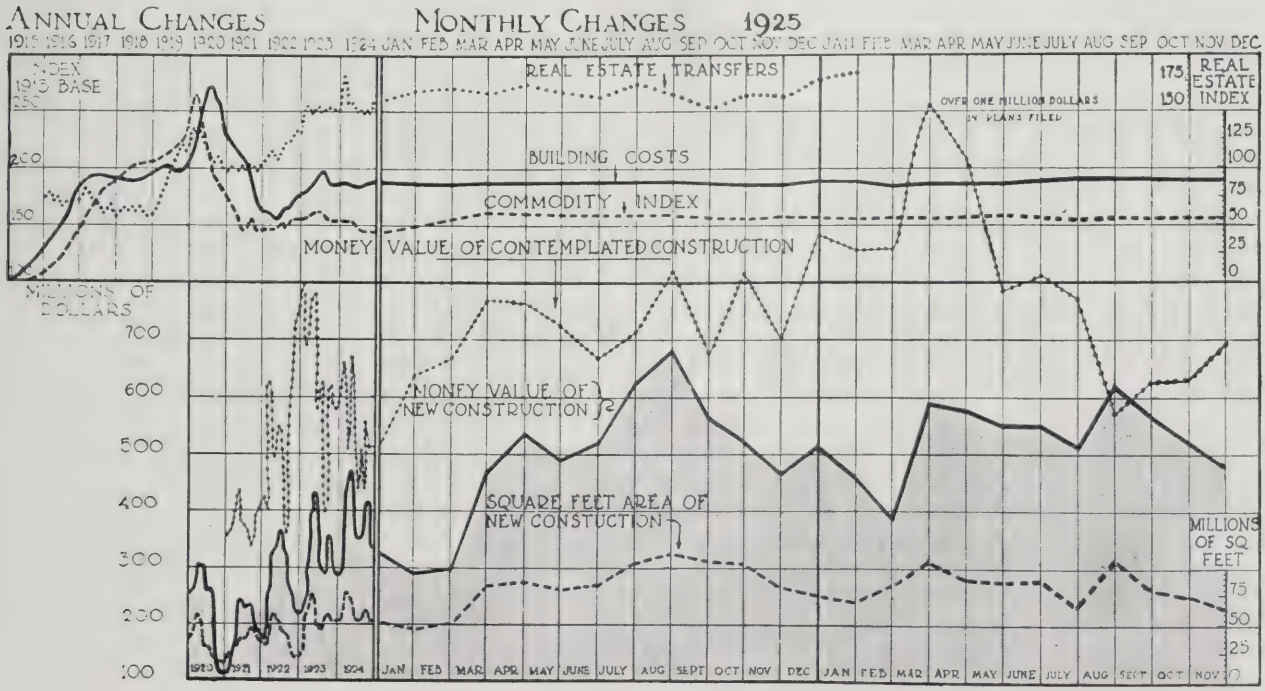
Type of Building	Requirements for New Buildings by Percentage 1926	1927	Change
Automotive	3.	4.6	+1.6
Banks	3.	2.3	— .7
Apartments	12.2	8.4	—3.8
Apartment hotels	3.8	3.2	— .6
Clubs, fraternal, etc.	5.6	5.2	— .4
Community and memorial	1.4	1.	— .4
Churches	5.3	6.9	+1.6
Dwellings (under $20,000)	6.1	4.	—2.1
Dwellings ($20,000 to $50,000)	3.1	4.2	+1.1
Dwellings (over $50,000)	1.6	1.1	— .5
Hotels	18.	15.	—3.
Hospitals	2.7	5.	+2.3
Industrial	2.	2.	..
Office buildings	11.7	5.	—6.7
Public buildings	6.	4.	—2.
Schools	6.9	13.8	+6.9
Stores	3.4	8.	+4.6
Theaters	2.	4.	+2.
Welfare, Y. M. C. A., etc.	2.2	2.3	+ .1

NORTH ATLANTIC STATES

Type of Building	Requirements for New Buildings by Percentage 1926	1927	Change
Automotive	2.1	2.1	..
Banks	2.7	4.5	+1.8
Apartments	10.1	18.5	+2.4
Apartment hotels	2.6	6.6	+4.
Clubs, fraternal, etc.	3.9	3.5	— .4
Community and memorial	2.6	1.6	—1.
Churches	3.9	5.6	+1.7
Dwellings (under $20,000)	5.1	2.3	—2.8
Dwellings ($20,000 to $0,000)	2.4	2.2	— .2
Dwellings (over $50,000)	1.4	1.9	+ .5
Hotels	6.4	5.2	—1.2
Hospitals	5.5	7.1	+1.6
Industrial	12.2	7.5	—4.7
Office buildings	11.8	10.9	+ .9
Public buildings	3.9	5.7	+1.8
Schools	12.5	8.1	—4.4
Stores	1.9	2.4	+ .5
Theaters	1.3	3.	+1.7
Welfare, Y. M. C. A., etc.	1.7	1.3	— .4

MIDDLE STATES

Type of Building	Requirements for New Buildings by Percentage 1926	1927	Change
Automotive	2.8	3.2	+ .4
Banks	3.4	2.6	— .8
Apartments	7.8	10.	+2.2
Apartment hotels	4.1	3.	—1.1
Clubs, fraternal, etc.	5.3	5.	— .3
Community and memorial	2.2	2.	— .2
Churches	4.5	6.	1.5
Dwellings (under $20,000)	2.8	2.	— .8
Dwelling ($20,000 to $50,000)	2.	2.4	+ .4
Dwellings (above $50,000)	1.3	1.1	— .5
Hotels	13.7	5.7	—8.
Hospitals	5.	4.9	— .1
Industrial	7.5	8.6	1.1
Office buildings	12.1	16.6	4.5
Public buildings	2.8	4.	1.2
Schools	13.5	13.6	+ 1.
Stores	2.5	1.6	— .9
Theaters	5.7	5.8	+ .1
Welfare, Y. M. C. A., etc.	.7	1.9	1.2



WESTERN STATES

Type of Building	*Requirements for New Buildings by Percentage* 1926	1927	*Change*
Automotive	2.3	3.6	+1.3
Banks	3.2	2.	—1.2
Apartments	7.8	9.8	+2.
Apartment hotels	5.6	4.3	—1.3
Clubs, fraternal, etc.	5.2	6.3	+1.1
Community and memorial	3.8	1.9	—1.9
Churches	4.4	6.2	+1.6
Dwellings (under $20,000)	4.7	3.	—1.7
Dwellings ($20,000 to $50,000)	1.4	2.3	+ .9
Dwellings (Over $50,000)	1.5	1.9	+ .4
Hotels	10.5	11.3	+ .8
Hospitals	7.8	3.9	—3.7
Industrial	3.8	2.9	— .9
Office buildings	14.8	11.6	—3.2
Public buildings	6.	9.6	+3.6
Schools	10.5	13.9	+3.4
Stores	2.3	2.1	— .2
Theaters	3.6	2.4	—1.2
Welfare, Y. M. C. A., etc.	1.	1.	

The next point of interest is the study of the indications of this forecast in relation to building activity in various sections of the country in 1927 as compared to that of 1926. Reports received by THE ARCHITECTURAL FORUM have been carefully compared with last year's forecast figures and with the actual record of contracts let. This comparison shows that in the Northeastern States building activity will be approximately 10 per cent less in 1927 than in 1926. This is closely in accordance with the average reduction of new construction volume expected throughout the country. In the North Atlantic States, which include the New York area, a similar average reduction in activity is expected. In the Southeastern States it is anticipated that construction will be probably from 20 to 25 per cent less in 1927 than in 1926. The Southwestern States, however, promise a volume of new building approximately equal to that of last year. Figures received from the Middle Western States, including the Chicago district, show no anticipated reduction of activity—in fact all indications point to a program probably 10 per cent greater than that of 1926. The Western States, however, are likely to reflect the national reduction, showing activity of about 10 per cent less than in 1926. Thus the various districts.

A comparison of anticipated new construction in various types of building for 1927 provides a basis for anticipating a number of changes both nationally and in various districts. The detailed comparison is found in the percentage tables presented with this article, but some of the outstanding features should be noted. For the entire United States, new automotive buildings, bank structures, club and fraternal buildings, community and memorial structures, hospitals, commercial buildings, schools, stores, theaters, and welfare buildings will be constructed in approximately the same proportions to the total new construction as was the case in 1926. A considerable increase is anticipated in the building of apartment hotels, churches, and public structures. Apartment buildings will represent a somewhat larger proportion of the new construction than in 1926. The construction of new hotels promises to be probably 20 per cent less than shown in the actual figures of 1926. In forecasting hotel construction last year, THE ARCHITECTURAL FORUM's figure turned out to be considerably too high, because it included a large number of projects which failed to materialize due to failures in financing programs. In Florida, for instance, many hotels which actually reached the foundation stage were not completed because of the collapse of the boom. Similarly, many local "drives" failed because the projects in mind were evidently too large,—a point which should be carefully watched in relation to any new hotel project, and one which the hotel interests are watching carefully for 1927. THE ARCHITECTURAL FORUM's estimate of hotel building shows a greater demand in the Northeastern States for 1927 than in 1926; approximately the same in the North Atlantic States; a reduction of about 20 per cent in the Southeastern States; approximately the same in the Southwestern States; less than half the demand in the Middle States (where a vast amount of new construction has been carried out), and approximately the same in the Western States. The comparative demand for new hotel buildings in the United States for 1927 is probably one-third less than that indicated for 1926. A reduction of approximately 15 per cent is expected in new construction contracts let for industrial buildings, such as factories and warehouses. Dwellings under $10,000 in cost, which made up approximately $1,000,000,000 of last year's total, will probably show a 20 per cent reduction in activity, while the construction of dwellings costing over $10,000 will be about 10 per cent less. Such are the indications.

These deductions, as taken from the large number of individual reports received by THE ARCHITECTURAL FORUM in compiling its annual survey, seem to be quite in accordance with changing trends of public demand for new buildings. The increased activity in apartment hotel building, for instance, is a definite reflection of a change in the mode of living which seeks convenience and comfort without the responsibilities of operating large individual dwellings. Thus it is anticipated that there will be a definite increase in the number of coöperative apartment buildings, and no decrease in the volume of high priced apartment construction during this year.

To sum up the general impressions of this forecast, it is apparent that 1927 will be another year of considerable prosperity for the building industry, and that economic conditions will provide both the demand and the means needed to add a vast contribution to the nation's total of well built structures. In other words, the United States is going about its building in a sensible way, undertaking no program which will do other than meet the requirements of the situation. During the next few years a gradual reduction of building activity is anticipated,—one which will bring the national building program to a new normal of approximately $4,000,000,000 a year.



ENTRANCE FRONT

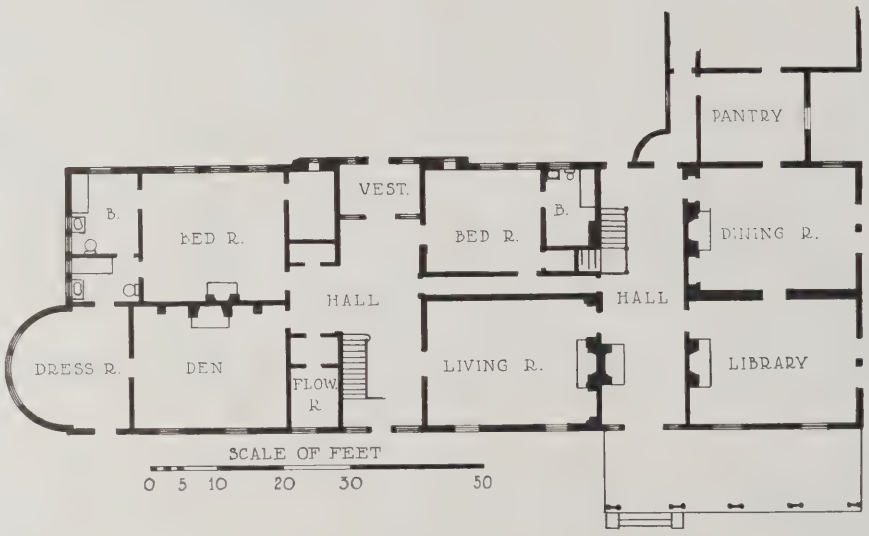


Plans on Back

GARDEN FRONT

HOUSE OF C. L. HAY, ESQ., NEWBURY, N. H.

PRENTICE SANGER, ARCHITECT



MAIN FLOOR

PLANS, HOUSE OF C. L. HAY, ESQ., NEWBURY, N. H.

PRENTICE SANGER, ARCHITECT



HALL AND STAIRWAY
HOUSE OF C. L. HAY, ESQ., NEWBURY, N. H.
PRENTICE SANGER, ARCHITECT

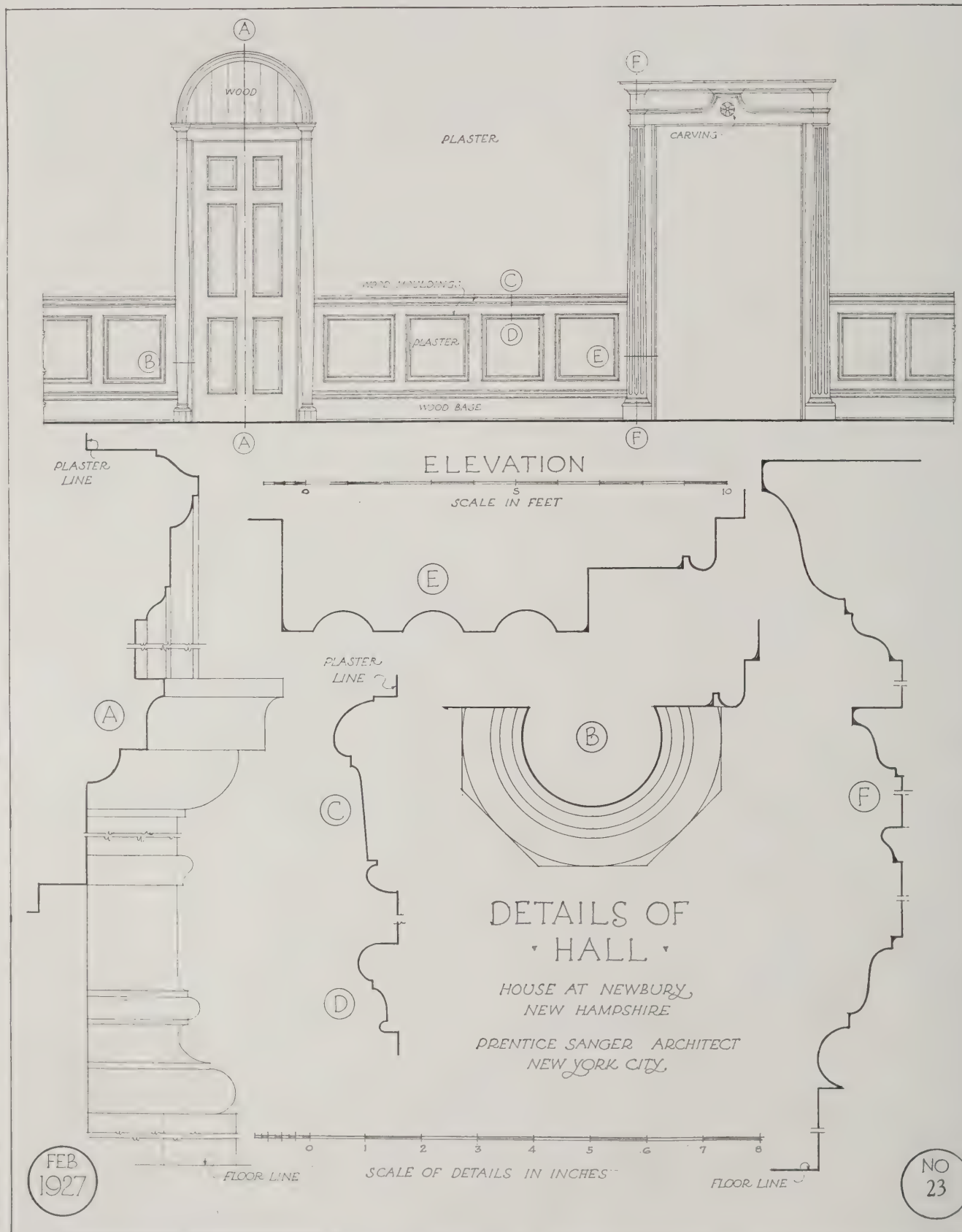


Details on Back

DETAIL IN HALL

HOUSE OF C. L. HAY, ESQ., NEWBURY, N. H.

PRENTICE SANGER, ARCHITECT


A
WOOD
PLASTER
F
CARVING
WOOD MOULDINGS
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DETAILS OF
HALL
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PRENTICE SANGER ARCHITECT
NEW YORK CITY
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SCALE OF DETAILS IN INCHES
FLOOR LINE
FLOOR LINE
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1927
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23



Details on Back of Plate 27

DOORWAY IN HALL

HOUSE OF C. L. HAY, ESQ., NEWBURY, N. H.

PRENTICE SANGER, ARCHITECT

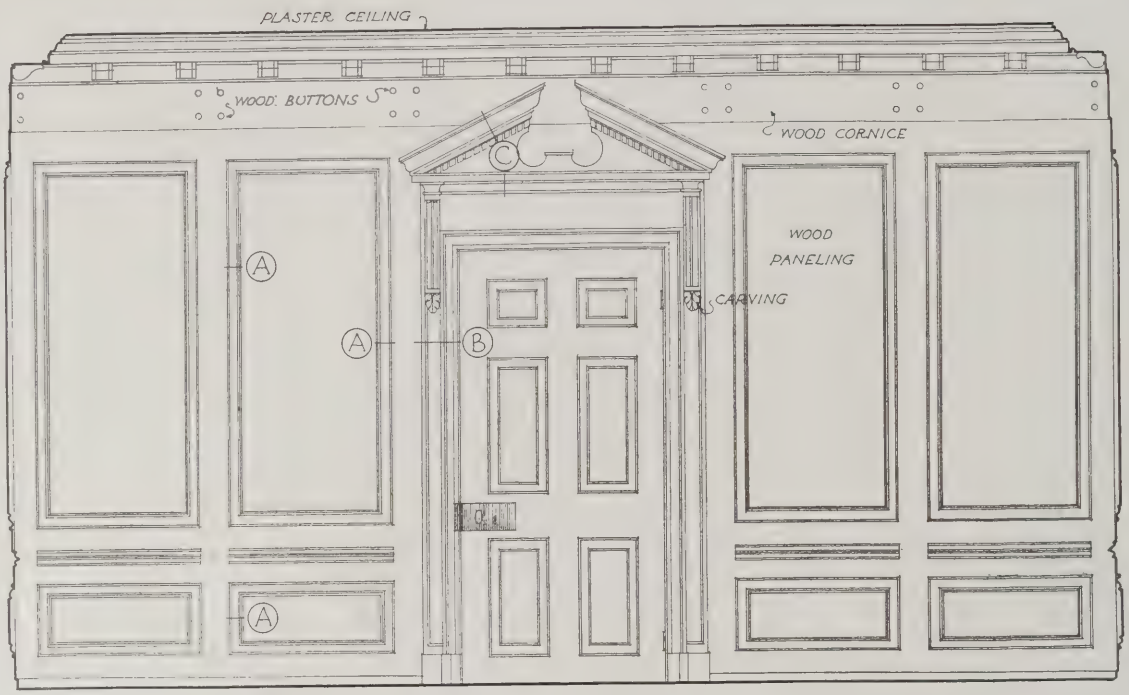


Details on Back

DETAIL, LIVING ROOM

HOUSE OF C. L. HAY, ESQ., NEWBURY, N. H.

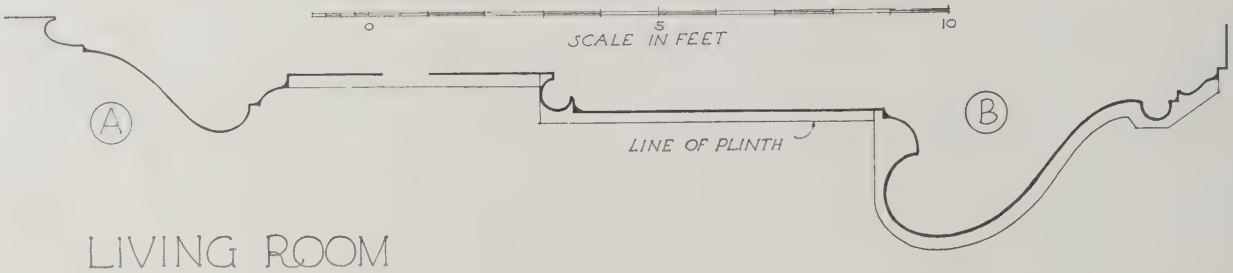
PRENTICE SANGER, ARCHITECT



ELEVATION

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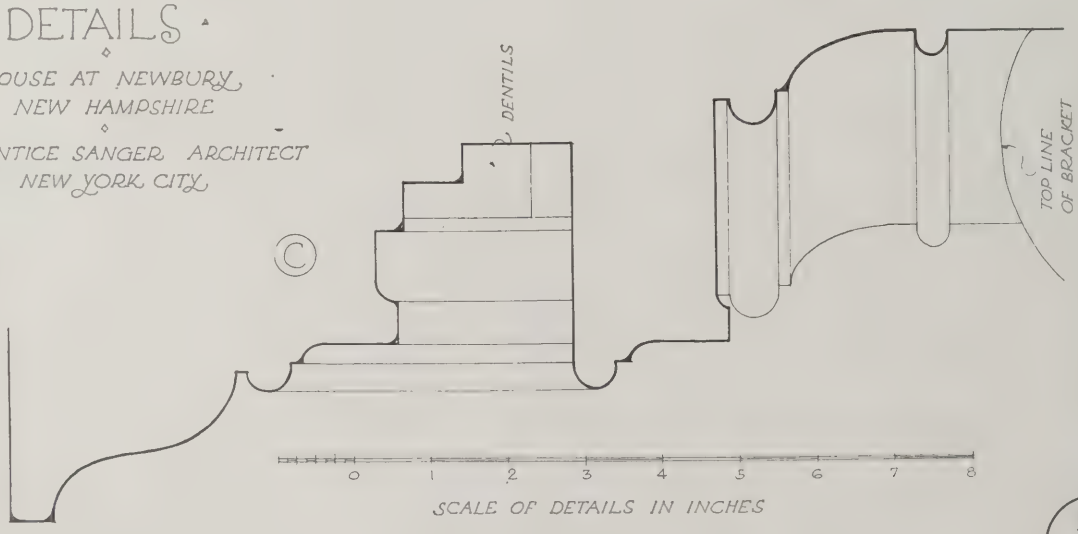
SCALE IN FEET



LIVING ROOM DETAILS

HOUSE AT NEWBURY, NEW HAMPSHIRE

PRENTICE SANGER ARCHITECT
NEW YORK CITY



SCALE OF DETAILS IN INCHES

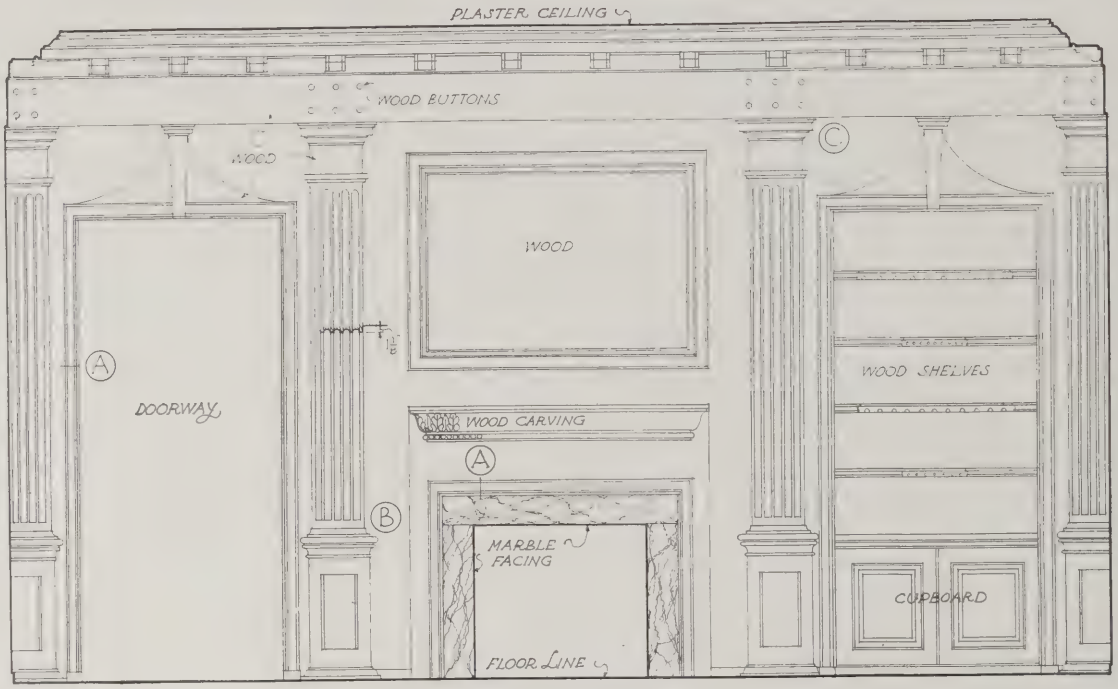
FEB. 1927

NO. 24



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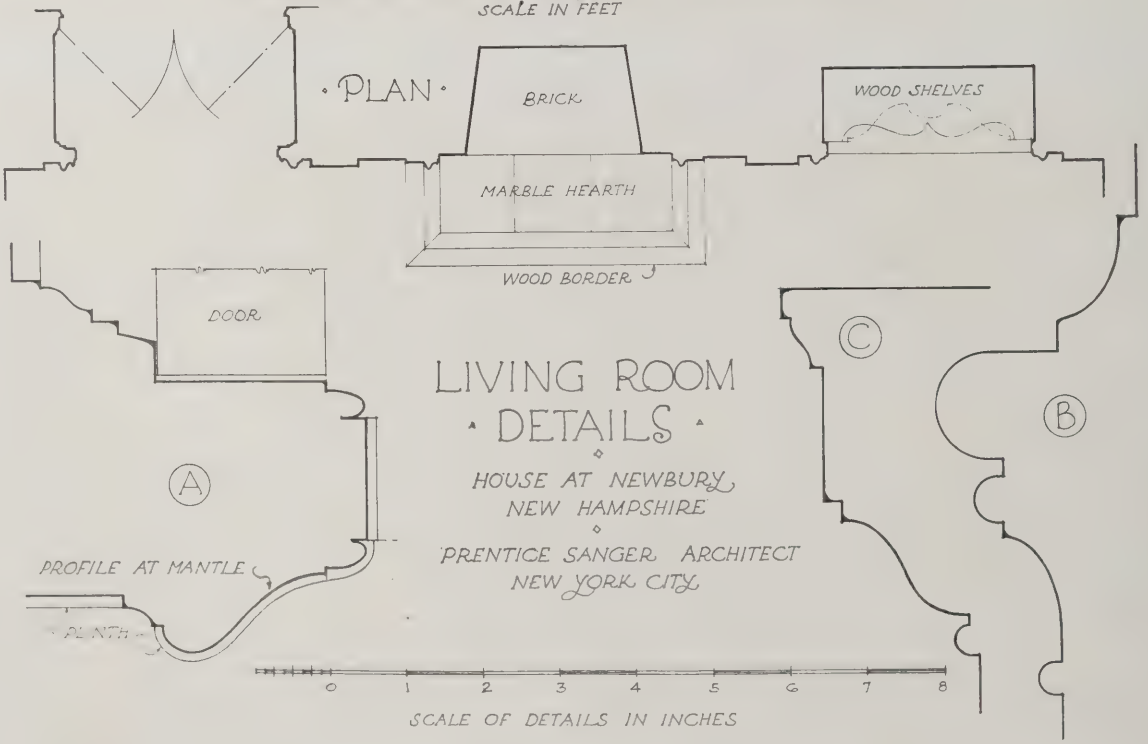
LIVING ROOM FIREPLACE
HOUSE OF C. L. HAY, ESQ., NEWBURY, N. H.
PRENTICE SANGER, ARCHITECT



ELEVATION

0 5 10

SCALE IN FEET



LIVING ROOM DETAILS

HOUSE AT NEWBURY
NEW HAMPSHIRE

PRENTICE SANGER ARCHITECT
NEW YORK CITY

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SCALE OF DETAILS IN INCHES

FEB 1927

NO. 25



LIVING ROOM IN COTTAGE



LIVING ROOM

HOUSE OF C. L. HAY, ESQ., NEWBURY, N. H.

PRENTICE SANGER, ARCHITECT



COTTAGE



BARNS

ESTATE OF C. L. HAY, ESQ., NEWBURY, N. H.

PRENTICE SANGER, ARCHITECT

ENGINEERING DEPARTMENT

Plant for Kelly Press Division, American Type Founders Co.

By WALTER H. LEWIS, Engineer

THE American Type Founders Company has, in conjunction with its type business, developed the "Kelly Automatic Press" in order to supply the printing trade with a flat-bed, rapid-production press. The popularity of the medium-sized unit, known as style "B," justified the later introduction of a larger- and a smaller-sized press, designated "Kelly Automatic No. 2" and "Kelly Automatic Jobber," respectively, each complete with automatic feeders, extension deliveries, and electrical equipment. The available space in the Jersey City type plant was soon overtaxed as the business expanded, necessitating distributing the work to other plants of the company as well as to outside firms. Anticipating the early need of a separate plant for the manufacture of Kelly presses, the company acquired a site of about ten acres at Elizabeth, where a plant could be built for production, assembly and testing operations. This property is a strip 200 feet wide by 2240 feet long, parallel with the Central Railroad of New Jersey right of way upon the north, and facing West Grand Street, adjacent to the El Mora station. It was an undeveloped piece of land, partially wooded, with a rise of over 25 feet from the east end, where El Mora Avenue crosses under the railroad, to the central portion, which rises from 4 to 6 feet above the adjacent tracks.

After the property had been acquired, a zoning commission was appointed in Elizabeth to regulate the classes of buildings which could be constructed in the business, industrial and residential districts. The proposed site being adjacent to a residence district, the officials of the American Type Founders Company assured the commission that the buildings of the new plant would not be of an objectionable type or out of keeping with their surroundings. At this point the firm of Day & Zimmermann, Inc., of Philadelphia, was called in by the owners to take charge, in conjunction with their operating officials, of the industrial layout, of design, and construction.

The three sizes of presses were analyzed into their component parts, and there were determined the machine tool requirements for the scheduled production of which the plant was to be designed. From these studies the industrial layout was made, showing the main working areas and the auxiliary departments, such as general offices; wash and locker rooms; cafeteria; first aid hospital; toilet rooms; elevators; pattern shop; heating plant, etc. For the estimated production schedule the total floor space needed for all departments without crowding was found to be approximately 250,000 square feet. After a thorough study, the engineers found that owing to the limited width and the sloping depth of the site a combination of single- and multiple-story buildings was justified. A comparison of the costs of the different types of construction was made, and it was decided that the type best suited for this plant was that having an un-fireproofed steel frame, with brick curtain walls and steel sash, concrete and wood block floors, and gypsum roof. The engineers designed the buildings with the exception of the enclosing architectural treatment, and then called upon the firm of Day & Klauder of Philadelphia as consulting architects to design an exterior that would be in keeping with the location and enclose the buildings as already designed. The type of architectural design selected by the architects was a form of Gothic adapted to commercial purposes, executed in a kiln-run, hard, common red brick with cast stone trim and gray mortar, producing a very pleasing effect.

A siding from the Central Railroad of New Jersey was placed along the north boundary of the plot, serving both the power plant and the receiving and shipping departments. The economics of the problem required the adoption of a combination of one- and two-story sawtooth buildings for the machine shop and a multiple-story type for the assembly and office buildings. Due to the sawtooth buildings' requiring uninterrupted north light, it was obvious that the multiple-story structures would have to be placed upon the other side of the plot. El Mora Avenue bounded the plot upon the east and is the main thoroughfare to the Jersey Central station and the trolley connections; it followed that the general offices should be placed upon this end of the plot. This building was set back from the street 130 feet to save a number of existing trees and to provide an attractive approach. The industrial control and the proper sequence of manufacturing operations required that the assembly buildings should adjoin the machine shop and office building, so it was placed upon the West Grand Street side of the plot. This location made it possible for the fire tower exits to open upon the sidewalk of West Grand Street. There is provided at the rear of the present buildings a heating plant adjacent to the railroad siding and a woodworking shop upon West Grand Street; west-



EL MORA AVENUE ELEVATION
BUILDING FOR AMERICAN TYPE FOUNDERS COMPANY, ELIZABETH, N. J.
DAY & KLAUDER, ARCHITECTS; DAY & ZIMMERMANN, INC., ENGINEERS



GRAND STREET ELEVATION

BUILDING FOR AMERICAN TYPE FOUNDERS COMPANY, ELIZABETH, N. J.

DAY & KLAUDER, ARCHITECTS; DAY & ZIMMERMANN, INC., ENGINEERS



MAIN ENTRANCE, OFFICE BUILDING



GENERAL VIEW

BUILDING FOR AMERICAN TYPE FOUNDERS COMPANY, ELIZABETH, N. J.

DAY & KLAUDER, ARCHITECTS; DAY & ZIMMERMANN, INC., ENGINEERS

ward of these buildings is a heavy casting storage yard for castings that have to be seasoned before machining. The main entrance to the mill yard is between the woodworking shop and the assembly building, opening from West Grand Street and giving access to the truck shipping dock, power house, casting storage yard and a driveway between the railroad property and the sawtooth building, leading out to El Mora Avenue. The latter driveway is for emergency use only or for intercommunication between departments. The floor loads that were used for the buildings are of interest,—main office, 60 pounds per square foot; cafeteria, 100; service bay, 350; assembly building, 200; machine shop, 250 pounds per square foot, excepting the one-story section, where the slab rests upon the ground, which is figured for a loading of 500 pounds per square foot upon an unsupported section of 10 feet.

The office building section has a frontage of 159 feet, 8 inches upon El Mora Avenue and a depth of 62 feet upon West Grand Street; it is three stories high, separated from the machine shop and assembly buildings by a fire cut-off wall, with story heights of 16 feet, 6 inches for the ground and main floors and 14 feet, 6 inches from bottom chord of truss to floor for the second floor. The first or ground floor contains the main entrance, the employment office, and the employes' main wash and locker rooms. The executive, sales and accounting offices are on the main floor, while the cafeteria, plant hospital and dental room occupy the upper or second floor. The assembly building section is 60 feet wide and 660 feet long, parallel to West Grand Street, three stories high, joining the office building upon the east and the machine shop upon the north side, with story heights of 16 feet, 6 inches upon the ground and main floors and 14 feet, 6 inches upon the second. The first or ground floor houses the raw material truck receiving dock, preliminary machining operations, automatics, and plating departments, the heat treating department and wash and locker rooms. The main press erection, machining, parts storage, testing and casting cleaning and painting departments are on the main floor, while the sub-assembly and experimental departments and the drafting room are distributed on the second floor. This building also contains the four fire towers. The second floor is lighted by side wall sash and a sawtooth skylight over the center bay for its entire length.

The machine shop section is 105 feet wide and 570 feet long; a part is two stories high, and the remainder is one story high, with story heights of 16 feet, 6 inches for the ground floor and 14 feet, 6 inches from bottom chord of truss to main floor. The ground story was carried back until the natural slope of the ground made the cost of the cut equal to that of the fill. The column spacing for this section was 20 feet east and west and 30 feet north and south, surrounded upon the south and east sides by a service bay 15 feet wide, containing the elevators,



North Elevation, Power Plant and Machine Shop Building for American Type Founders Company

Day & Klauder, Architects; Day & Zimmermann, Inc., Engineers

storage spaces, and main supply pipes. The ground floor houses the rough material storage spaces in the darkest portion, since it is usually necessary to use artificial lighting on account of bin spacing and storage shelves; this floor also contains the preliminary machining, automatics, and compressor room departments, the main electrical switchboard and transformer room, and stores. The main machine shop and shipping room are upon the main floor. Excellent natural lighting is obtained on the main floor through the sawtooth skylights and the exterior windows along the north wall. In addition the A-frame skylight in the 15-foot wide service or elevator bay, which connects the 90-foot sawtooth section with the 60-foot wide multiple-story building, admits additional light into the north side of the multiple-story structure. The shipping department is at the west end of this section, connecting with the covered shipping dock extending along the end and side of the sawtooth building, permitting the shipment of the company's product by motor trucks or railroad cars. The separate two-story building, 64 feet square, at the rear of the property along West Grand Street, houses the departments with the greatest fire hazards,—box and crate making being done on the first floor, and pattern making on the second. Column centers are of the same spacing as used in the main multiple-story building, so that the two structures could be connected by a bridge at the second floor if it ever becomes necessary to have them joined.

The expansion program for the future calls for an extension of this building westward along West Grand Street, with an adjacent single-story sawtooth building along the railroad side lining up with, but separated from, the present sawtooth shop. The heating plant, now provided behind the main plant between the railroad and woodworking shop, would be enlarged to suit, and would then be centrally located to serve the initial and later buildings. The five elevators, conveniently distributed, provide satisfactory handling between floors of the raw materials and parts in process of manufacture. One of these elevators is placed so that it can serve the main offices and cafeteria. The sanitary facilities have been conveniently located throughout the buildings, to take care of the department requirements. Handling of press parts as well as the assembled presses on the erecting floor, in the running-in test department and shipping department, is facilitated by floor-controlled traveling electrical cranes. These cranes are of the transfer type with stationary cross-over I-beam tracks suspended between adjacent crane runways at suitable intervals, so that the traveling motor hoists can transfer from one bay to the bay adjacent, or deliver finished presses for shipping.

Mechanical Equipment. The heating system of the plant affords approximately 38,000 square feet of direct radiation. Radiators of the wall type are placed along the walls under the windows and under the sawtooth roof. Steam is generated at 100-pound



Sub-Assembly Department, Building for American Type Founders Company

Day & Klauder, Architects; Day & Zimmermann, Inc., Engineers

pressure in the boiler house located at the west end of the plant. A high-pressure steam main is run the full length of the ground floor of the entire building. From this high-pressure main steam is taken at six different points and passed through regulating valves to the heating mains. Each of these heating mains furnishes steam to six bays of the main building, and each floor of these six bays is under control of a thermostatic temperature-regulating valve. By the use of this system of distribution the cost of piping and temperature control is kept very low. Returns and air are removed from the heating system by means of vacuum pumps, automatically controlled. The boiler room contains two 300 h. p. water tube boilers with hand stokers for burning buckwheat coal. The coal is received in hopper-bottom cars on the railroad siding alongside the boiler house. It is passed through a track hopper to the coal elevator, which conveys the coal to the overhead steel plate bunker in the boiler house. The coal is spouted from the bunker to the stoker hopper. Ashes and soot are removed from the boilers by means of steam jet conveyors and carried to the ash bin located out of doors above the railroad siding. Ashes can be either dropped into railroad cars or removed by auto trucks. An extensive compressed air piping system has been installed throughout the plant. The compressed air is furnished by a compressor driven by an synchronous motor and is located on the ground floor, approximately at the center of the plant. Two deep well pumps under automatic control in connection with two pressure storage tanks supply the water for operating and sanitary purposes. A separate drinking water line furnishes this well water to the fountains at a temperature of about 56° Fahr.

Electrical Equipment. Energy for all power and light requirements is purchased from the Public Service Electric Company of New Jersey. This power is delivered at 2400-volt, 2-phase, 4-wire, 60-cycle, a.c. and is carried underground to the main switchboard room located at the approximate center of the plant. A portion of the power is used at this voltage for driving a 500-cubic foot air compressor and also for driving a 150-kw., d.c. generator for 250-volt, d.c. power. Provision is made on all equipment for a change at some future time from the 2400-volt 2-phase, 60-cycle supply to a 4150-volt, 3-phase, 60-cycle, 40-wire neutral grounded supply. Provision is made for power factor correction in making the two motors of the synchronous type with additional field capacity to compensate for the lagging current taken by the induction motors throughout the plant. Control of the 2400-volt power is taken care of by an 8-panel switchboard located at the indoor substation. For the driving of production plant machinery and of such auxiliary equipment as elevators, pumps, fans, etc., 220-volt, a.c., 3-phase, 60-cycle; 3-wire power is supplied from a bank of two 333-k.v.a. connected transformers. Provision is made for growth in this load when the changeover is made from 2-phase to 3-phase supply by adding an additional 333-k.v.a. transformer, making a total of 999 k.v.a. The distribution is at 22-volt, 3-phase, 6-cycle, a.c. in approximately 15 feeders. These feeders are carried out radially from the low voltage switchboard. The low voltage switchboard distributes all power for motors, both a.c. and d.c., as well as for the entire plant lighting system. Provision is made for a total connected a.c., 220-volt motor load of approximately 1250 h. p. and a 250-volt, d.c. motor load of approximately 275 h. p. The plant buildings are equipped quite generally with 1- and 2-ton motor-operated cranes with 250-volt, d.c. motors. The power is supplied from a 150-kw. motor generator set.

All lighting distribution for the plant is at 115/230-volt, a.c., 3-wire, single-phase. This power is obtained from a bank of three 100-k.v.a. transformers, stepping the voltage down from 2400-volt to 115/230-volt. The lighting throughout the factory buildings is by means of r.l.m. reflectors with 115-volt Mazda enameled bowl lamps. The spacing of these units is approximately standard throughout, being 10 by 10 feet, with from 11 to 14 feet mounting height. The office building illumination is by semi-indirect lighting units. Provision is made for the emergency lighting of stairways and exits. Energy for the emergency lighting is supplied from a small transformer direct from the 2400-volt supply and is separate from the general lighting system. In the event of failure of current for lighting from the three 100-k.v.a. transformers, the lights are automatically switched to a small emergency transformer.

All Kelly presses are equipped with driving motors, which may be a.c. single-phase or polyphase, of 110, 220 or 440 volts at 25-, 40-, 50- or 60-cycle, or d.c. of 115, 230 or 550 volts. An 8-panel testing switchboard is installed with the necessary motor generator sets and transformers for furnishing the a.c. and d.c. voltage. Circuits are carried out to the testing stands for each press through a plug board. A fire alarm system, connected to the city fire department, is installed at the plant. There are 25 fire alarm boxes and gongs placed throughout the plant.

Construction. The building of this plant was carried on under the supervision of the engineers upon their "minor contract plan," which consists of dividing the work in such a manner that specific lump sum bids were secured from contractors specializing in each part of the work. The specifications were written for each portion of the construction as a unit, bids were taken from a selected list of contractors who specialize in the type of work under consideration, and the contract was let to the lowest lump sum bidder. The engineers had a complete field force upon the site to coördinate and supervise the work of the different contractors and to keep accurate field costs. The construction of the plant was started about the first of May, 1923, the owner commencing the installation of his machinery eight months later, and operating in another two months.

THE ARCHITECTS' FORUM

EDITOR'S NOTE. This editorial by Harvey Wiley Corbett on "Some Observations on Commercial Architecture," is the second of the opinions on matters of current interest to architects which it is intended to publish upon this page from month to month. The Architects' Forum represents a new department, in which will appear contributions from Harvey Wiley Corbett, Aymar Embury II, C. Stanley Taylor and Alexander B. Trowbridge, all of New York; Charles G. Loring of Boston, and Rexford Newcomb of the University of Illinois. Comment on matters of interest is invited

EVERY age has its own peculiar trend. Ours is commercial and industrial. Whoever conceives it as an age of art, or statesmanship, or war, simply does not see it whole. We have had a war, but it was an industrial war. We killed wholesale by means of machinery and the products of machinery. It was the most impersonal war the world has ever known. We have art, but it is hardly a renaissance. We have statecraft, but it is a poor thing beside the Greece of Pericles. We have religion, but life *was* religion in the middle ages.

All the arts inevitably take their color from the ages in which they flourish, but none so much as architecture. In fact, architecture, being utilitarian as well as æsthetic, is the mirror of every civilization. It reflects not only the color of each period but every lineament of its form more accurately than any written record. Hence the enduring monuments of mediævalism are its churches, and of *cinquecento* Florence, its palaces and galleries. The monuments of today will necessarily be factories and sky-scrapers!

In a broad sense it may be said that utility is the first essential in any building. A house is primarily a shelter from the elements; a temple a protection for the shrine. Beauty is accessory. It is only man's unconscious need for beauty that weds grace or grandeur to home and church. But when some new, exceptional condition creates a new type of structure, it takes time for the human mind to conceive the structure in terms of anything but its use. Appearance is neglected until it has proved its suitability to the required purpose. At first factories were sheds, and office buildings were biscuit boxes. Years elapsed before it occurred to anyone that such structures were even fit subjects for architectural treatment. The reason we have a Telephone Building or a Shelton Hotel is because we have begun to realize that beauty and utility are not, and never have been, strangers. But it has taken time for the idea to develop. Twenty years ago, when the owner, out of sheer swank, wanted adornment for a commercial building, he called in an architect and bought trimming. He paid by the yard for cornices, and by the square foot for stucco. When the building was done, he pointed to it with pride and called it "art." It raised his standing in the community, and gave him a sure sense of belonging to the elect. He felt superior to his fellows because he possessed a sense of beauty,—but the building was still a biscuit box. Another decade passed before he grasped the idea that the shape of the box was wrong, and that all his expensive trimmings were lost on a box of gigantic proportions. The moral is that industrial and commercial architecture is a problem of mass.

We cannot solve the particular problem of our day as the Greeks solved theirs, for it is a different problem, arising from a different set of conditions. When we have learned that, we shall be better architects. And when we have solved it, the public will be proud of its factories and sky-scrapers, instead of indifferent to them. It must be said, however, that the new conception of commercial architecture is developing far more rapidly than any other style ever developed. In the past, styles were modified slowly, but sky-scrapers have changed radically in 20 years. The reason is that architectural forms change in direct ratio to the rapidity of building construction. We build now five times as fast as then. Therefore styles change in one-fifth of the time. Power machinery has wrought the change. Our own American architecture began well. It was simple and sound. Colonial houses grew from the soil. Then we became self-conscious, and architecture suffered the worst slump the world has ever known, not even excepting the *art nouveau* nightmare of sainted memory. It rallied bravely when Hunt and McKim and White brought intelligent study to bear and reëstablished sanity and proportion. There was a breathing space, but it was only marking time, for it soon became apparent that Greek railroad stations and Palladian libraries didn't quite fit. The classical slant was well enough for banks and state capitols, but it faltered when buildings took to walking on stilts. It was baffled when factories covered a hundred acres of land. Architecture found new wine too strong for old bottles.

Art is an elusive thing. Just when we are sure we have it cornered, compressed into a formula, indorsed by academies, and pinned with medals, we find out that it wasn't really art at all. Then some clever fellow observes that the seeds of art were in something we never even suspected, something we looked upon with disdain. When the bigwigs of American architecture said that commercial structures were beneath their notice as artists, they "passed up" their one genuine chance of creating something vital and enduring. Instead, they spent their time on the elaborate approximations of Romanesque churches and French chateaux, which have already been smothered out by the rank growth of sky-scrapers. Their primroses are lost in the thick growth of hardy weeds! We cannot suppress the weeds; our work is to turn Burbank, and make them flower too!

HARVEY WILEY CORBETT.

SMALL BUILDINGS

Show Windows and Shop Fronts

By LEIGH FRENCH, JR.

ONE of the architectural responsibilities as well as one of the architectural opportunities of the present day is to be found in dealing with the small building. By reason of their numbers, small or moderate-sized structures must inevitably set the prevailing architectural tone of the communities in which they stand, both in the city and in the country town. Even in the largest cities, where single structures,—large in both extent and scale,—are rapidly taking the places of a number of smaller buildings, many neighborhoods still remain, and in all likelihood will remain for a long time to come, where smaller buildings are distinctly in the majority. In country towns the small building is even more to the fore, and its permanence, in business and residential districts alike, is not likely to be seriously interfered with. In designing new buildings and in remodeling and in converting old dwellings into business premises, therefore, the field of opportunity is unlimited, and much depends on its use.

One of the chief obstacles to more rapid architectural improvement in this field lies in the attitude of many architects themselves. Small commissions are unattractive and, when compared with larger and more lucrative commissions, they mean returns out of all proportion to the time, labor and thought required. Consequently, not a few architects of wide reputation and recognized ability will not bother with them at all and do not wish to be in any way concerned with them. Most of these small commissions, therefore, are left to the younger and less experienced members of the profession, or else they fall to the lot of the speculative builder and fail of receiving any architectural treatment at all. Under the circumstances, the architect with an active practice can scarcely be blamed for his aversion to the



Figure 1. Shop Front on River Street, Boston
Frank Chouteau Brown and John H. Enright, Architects



Figure 2. 24 Newbury Street, Boston

small commission, and yet we may seriously ask ourselves whether a little occasional altruistic concern with these minor works, which in the aggregate have so marked an effect upon the general aspect of the community, would not tremendously increase popular appreciation of architecture and thus immeasurably redound to the benefit of the profession in works where infinitely larger issues are involved.

The designing of small shop fronts, with the conversion of the lower floors of former dwellings into shops, constitutes an especially important branch of work in the realm of small architecture. In the same category may be placed the designing of relatively small new buildings, the lower floors of which are devoted to shops while the upper floors are reserved for living purposes. Wherever such work has received any competent direction at all, the results as a rule have been encouraging and indicative of an increasing popular appreciation of what is both decorative and serviceable,—decorative to look at, and serviceable from the shopkeeper's point of view in the way of convenience and of presenting an inviting and profitable appeal to prospective customers.

In examining the accompanying illustrations of small shop fronts, several being in Boston, certain cardinal factors offer themselves for consideration. First, there is the relation of the shop fronts to the rest of the elevations above them, a well thought out instance of which appears in Figures 2, 3 and 4. Second,



Figure 3. Shop Front with Second Floor Show Window
Strickland, Blodget & Law, Architects



FIGURE 4. SHOP AND OFFICE BUILDING, 24 NEWBURY STREET, BOSTON
STRICKLAND, BLODGET & LAW, ARCHITECTS



Figure 5. 119 East 57th Street, New York
Lewis C. Patton, Architect

there is the relation of the entrances to the display windows, each of them separate units of the compositions. Third, there is the treatment given the windows themselves. In Figures 5 and 6 appears an instance of the composition of a front which has been designed to definitely express the character of the shop within. In this case it happens that the merchant offers for sale various kinds of artistic fireplace fittings, and antique and modern mantelpieces belonging to the various periods of English architecture. What could be more appropriate than that the exterior of the building should reproduce in detail and spirit some old Elizabethan building in Chester or Tewkesbury? The recessed treatment of the store front itself is of unusual interest both in plan and architectural effect. The modern idea of the recessed store front has here been very cleverly worked out along lines following early English precedents. As may be observed from the views, not only additional show-window space is provided but also a quaint stairway which leads up to the second floor of the shop. The detail of the wood carving and also the balustrades of the stairway and second floor balcony have unusual charm and interest. The floors above the shop were planned for studio and living purposes by the owner of the building and keeper of the shop.

In the glazing of the display windows of the shop, this particular instance presents an example of what has been done in designing the majority of shop fronts illustrated here. It is significant of the general trend of preference in such matters that the old custom of using small glass units is coming more and more into favor. Whether this clearly marked preference is dictated purely by taste or whether it is also influenced by considerations of psychology, it would be hard to say. As a matter of actual fact, the element of psychology enters very strongly into the matter. Shopkeepers are grad-



FIGURE 6. INTERESTING ARRANGEMENT OF RECESSED SHOP WINDOWS ON TWO LEVELS
LEWIS C. PATTON, ARCHITECT



FIGURE 7. SHOP BUILDING ON CHESTNUT STREET, BOSTON
CHARLES G. LORING, ARCHITECT

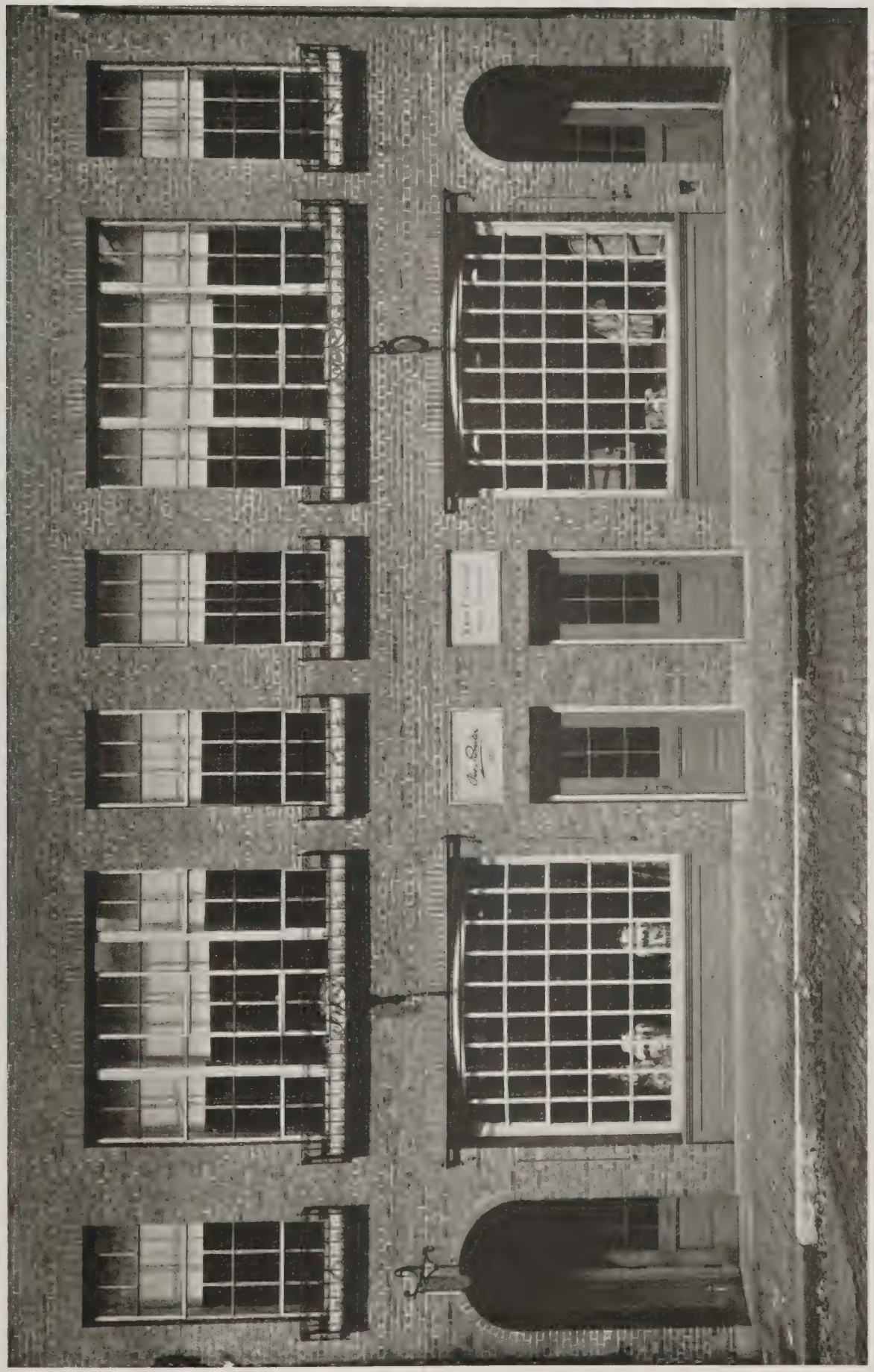


FIGURE 8. EXCELLENT ARRANGEMENT OF SHOW WINDOWS AND ENTRANCES TO UPPER FLOORS
CHARLES G. LORING, ARCHITECT



Figure 9. Shop Front on Charles Street, Boston
Krokyn, Browne & Rosenstein, Architects

ually realizing that large plate glass display windows, free from any glazing divisions, are not necessarily the best for arousing the interest of passers-by in the goods displayed. The freedom from glazing divisions, it is quite true, permits an unobstructed view of everything in the window, leaving nothing to the imagination; but there is such a thing as making the display too obvious and eliminating the valuable element of curiosity. The smaller panes, with their multiple divisions of glazing bars, may not show the wares as plainly as one might see them by handling them, but it must be remembered that a thing not fully seen not only stimulates interest but also excites curiosity and prompts a desire for further investigation. And properly stimulated curiosity, along with the desire for further investigation, is likely to lead people *inside* the shop in pursuit of satisfaction of gratified curiosity.

An interesting and thoroughly agreeable arrangement of fenestration in a new building where the ground floor is unmistakably designed for the accommodation of shops while the upper floors might be used equally well for apartments or offices is shown in Figures 7 and 8. So far as the present discussion is concerned, it is immaterial to what purposes the upper floors are devoted. What is really significant is the harmonious and pleasant composition of the whole facade, incidentally showing how readily possible it is to incorporate well designed small shop fronts on the ground floors of buildings, the other floors of which are destined to serve a variety of different uses. To revert once more to the glazing of display windows, one could ask no better example than this of the admirable result of the small glazing divisions of the shop windows in their relation to the fully organized aspect of the entire front of the building. It needs no very great effort of the imagination to picture what



FIGURE 10. GOOD ARRANGEMENT OF TWO-STORY SHOP WINDOW
KROKYN, BROWNE & ROSENSTEIN, ARCHITECTS



FIGURE 11. SHOW WINDOW AND ENTRANCE DOORS, 821 MADISON AVENUE, NEW YORK
MOTT B. SCHMIDT, ARCHITECT

would have been the effect if the shop windows had consisted of single huge sheets of plate glass. The scale of the whole elevation would have been seriously disturbed, and the superstructure would have conveyed the impression of being set upon a very inadequate support, formed chiefly of several enormous blanks. The shop front illustrated in Figures 9 and 10 carries a note of sharp distinction between the two lower floors devoted to shop requirements and the two remaining upper floors. The unity of the shop front composition is definitely marked, — and very appropriately emphasized, — by the fluted pilasters and the paneled entablature which form a substantial frame for the visibly commercial part of the building. In examining this shop front more at length, one becomes aware of the means by which its successful articulation has been accomplished. The entablature, with its oval rosettes and mouldings, and the triple-arched transom flanking the doorways are somewhat suppressed. In both Figures 2 to 4 and 9 and 10 the shop windows and the shop entrances, as well as the independent entrances to the upper floors, have been kept distinct and separate each from the other in the organization of the designs, and this clear recognition of their separate functions adds to the convincing quality of both the compositions.

In the alteration shown in Figures 11 and 12, the shop front is minimized in importance and subordinated to the house door, which carries the chief accent on the ground floor, while the display window and the shop door are merged into what is a secondary feature. The whole elevation, however, is thoroughly logical in treatment, which is more than may be said for the shop front illustrated in Figure 13. There, while the display window is an agreeable enough feature in itself, it is altogether at variance with its surroundings, as may be seen by comparing it with that part of the door which is



Figure 12. Remodeled Building on Madison Avenue, New York
Mott B. Schmidt, Architect



Figure 13. Show Window on Dartmouth Street, Boston

visible. It is unfortunate that a more uniform treatment was not applied to the whole ground floor, keeping door and display window as distinct units, but binding them into a single composition by means of a consistent style instead of leaving them as disorganized and unrelated items having no connection with each other and obviously out of harmony.

By way of contrast, the corner shop illustrated in Figure 14 carries immediate conviction by reason of its consistency and the clarity of its design. No one could mistake the fact that the occupancy of the ground floor by shops had been intended when the building was first planned; the whole scheme indicates this. The treatment of the shop fronts satisfies the eye and leaves none of the disquieting impression that the lower story is being crushed under a superstructure too heavy for it. Quite aside from any æsthetic considerations, the arrangement of the windows insures not only adequate display facilities but also the maximum of light entering the shops. The entrances on both fronts, with their accompanying bow windows, are agreeably disposed in accord with their relative importance, and the chief emphasis is placed upon the display windows, as it should be. Again, in Figure 15, where the entrance is below the level of the sidewalk, the emphasis is given to the bow display window, and the forward projection takes advantage of every inch of space as well as affording a pleasant



Figure 14. Building at Tremont and Avery Streets, Boston
Bigelow & Wadsworth, Architects

incident of design, unusual in appearance but altogether defensible on grounds of usefulness. The long, uninterrupted glazed space above is less happy in conception than the lower division of the shop front immediately beneath it and minimizes the scale of the general composition, which is otherwise good.

The building shown in Figure 16 is a structure of stronger scale than most of those shown in the illustrations already described. The design of this shop front, which is one of the most pleasing in the whole collection, grows out of the necessities of the situation. The window satisfies the requirement of supplying the maximum of light to the shop within, and the articulation of the glazed area affords the interest of pleasing design without lessening the display value, and also by means of the slender metal entablature and columns conveys the sense of affording sufficient support for the masonry above the opening. But for the well conceived design of metalwork and small plate glass panes, the opening would appear to be nothing but an unrelated and unfinished recess by means of which the building above had been underpinned. There is no possible objection to the use of plate glass for the windows of small shop fronts. On the contrary, there is every reason in the world why plate glass should be used for them. At the same time, there are excellent reasons for avoiding large, undivided expanses of plate glass, reasons already mentioned in



Figure 15. 126 East 57th Street, New York



Figure 16. Show Window at 90 Berkeley Street, Boston
Shepard & Stearns, Architects



FIGURE 17. 16 EAST 60TH STREET, NEW YORK
FRANCIS LENYGON, ARCHITECT



FIGURE 18. 3 EAST 47TH STREET, NEW YORK
JAMES E. CASALE, ARCHITECT



FIGURE 19. TWO-STORY SHOW WINDOW AT 131 EAST 57TH STREET, NEW YORK
SHREVE & LAMB, ARCHITECTS



FIGURE 20. IMPORTANT SHOW WINDOWS ON TWO STREETS
GEORGE M. McCABE, ARCHITECT

this text and well exemplified by numerous illustrations. It is a detail of great importance in design.

The shop front shown in Figure 17 is of perfectly acceptable design, but, unfortunately, it suffers from having no apparent relation to the upper part of the building of which it is a part. It is worth noting, however, that in designing this shop front supports of visibly adequate proportions are placed at intervals and that the utmost possible unobstructed space is devoted to the windows. In Figure 18 the shop front is more fortunate in having a perceptible architectural relation to the facade above it, a relation assisted by the use of an iron balcony. The entrances and the display window, although quite properly kept as separate units, are bound into one coherent composition by the arch, and proper emphatic accent is given to the window.

The book shop front, shown in Figure 19, not only demonstrates the wisdom of using thin multiple glazing divisions but also brings us to another psychological consideration,—the color of the glazing bars. In this case, where the backs of books offer the chief objects of attraction to be seen by the passer-by, a subdued color of low key is manifestly an advantage, acting more or less as a foil for the color and gilding of the bindings and throwing them into greater prominence. Subdued color with a good background quality is also seen in the marble base, so that there is nothing to draw the eye away from the wares displayed in the window. The most interesting shop front is that shown in Figure 20. The architecture is unmistakably part and parcel of the building above the ground floor, and the design is about as nearly perfect as it could be for purposes of display for the wares within the shop. Every principle of shop front psychology hitherto alluded to is successfully embodied in the manner in which the whole scheme has been carried out. Another point well exemplified in this shop front is the desirability of keeping the windows free from an ostentatious and confusing display of gilt lettering on the glass. The goods in the display window are naturally the objects of attraction, and if the goods are well and attractively arranged they will naturally draw the attention of those who pass along the street. The name of the shop can be placed beneath the window or in some other position where it will be plainly visible without being spread in bold letters across the glass, where it is almost inevitably a source of serious distraction.

Designing shop fronts, in fact, offers many compensations which more than atone for the small amount of profit which it involves. Among them is the satisfaction which follows every triumph over difficulties which threatened frustration, and another comes with the satisfaction which observation of good architecture always brings,—particularly when it is placed where it must frequently be seen!



Figure 21. Shop Front Showing Interesting Arrangement of Large and Small Panes

William Stanley Parker, Architect

INTERIOR ARCHITECTURE

The Wheeler-Beecher House, Bethany, Conn., Built 1805

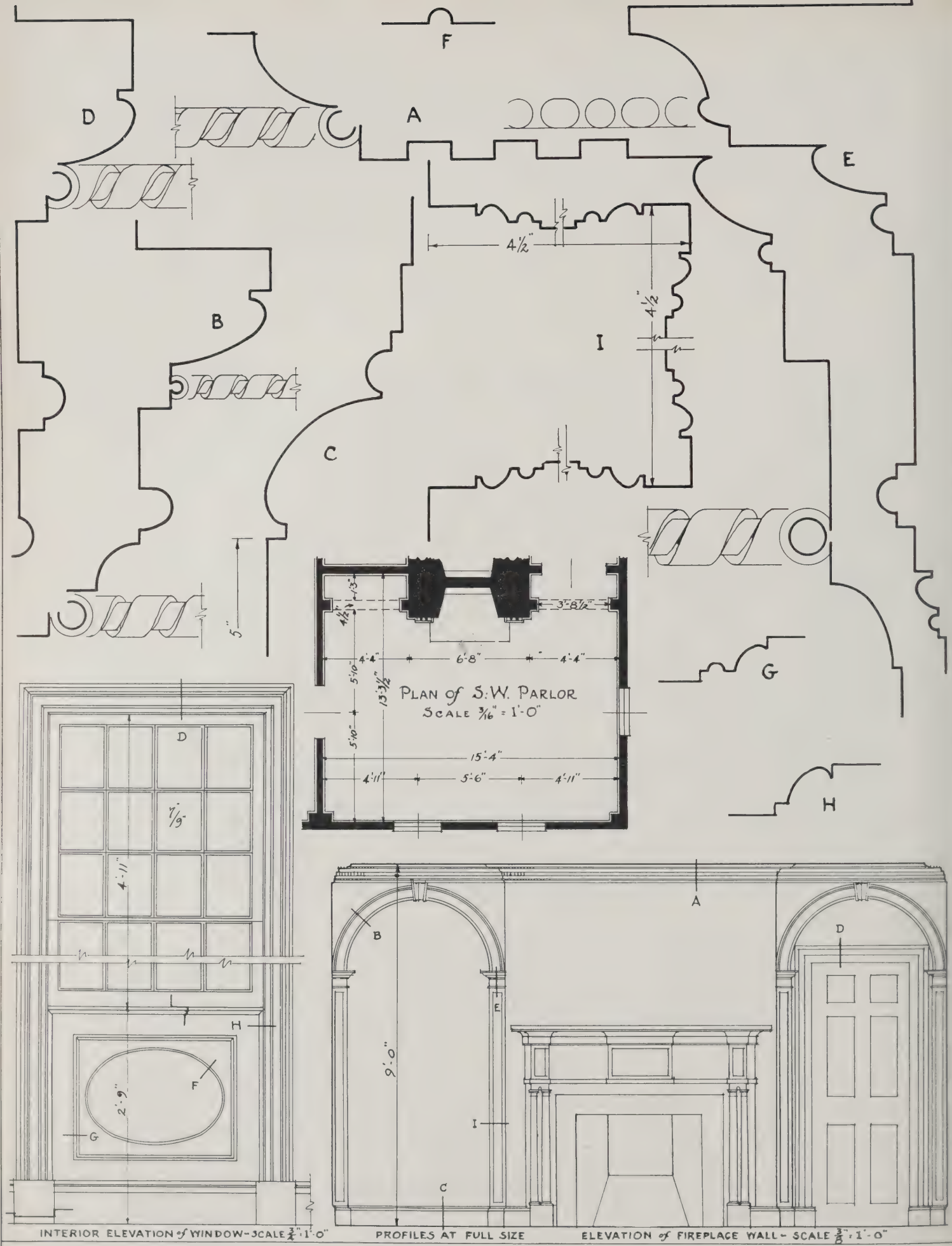
David Hoadley, Architect

Measured and Drawn by Myron Bement Smith



This house is on the main road between New Haven and Waterbury. David Hoadley, the builder, was one of the most accomplished designers of the vicinity. He was a native of Waterbury and apprenticed to Bulfinch while the latter was building the old city hall of Hartford. The United Church on the Green at New Haven is Hoadley's best monument, a perfect example of early American architecture. A porch from a house by him but now demolished is in the Metropolitan Museum, New York.

At either side of the hall of the Beecher house are parlors of identical plans. The only variation in the decoration of these rooms is in the treatment of the mantelpieces. The rope mouldings were favorites of Hoadley; he evidently must have owned a lathe for turning them in various sizes.



INTERIOR ELEVATION of WINDOW - SCALE 3/4" = 1'-0"

PROFILES AT FULL SIZE

ELEVATION of FIREPLACE WALL - SCALE 3/8" = 1'-0"

EARLY ARCHITECTURE OF CONNECTICUT

DETAILS OF PARLORS

Wheeler-Beecher House

Bethany, Conn.

David Hoadley Architect

MEASURED & DRAWN BY MYRON BEMENT SMITH



WINDOW DETAILS

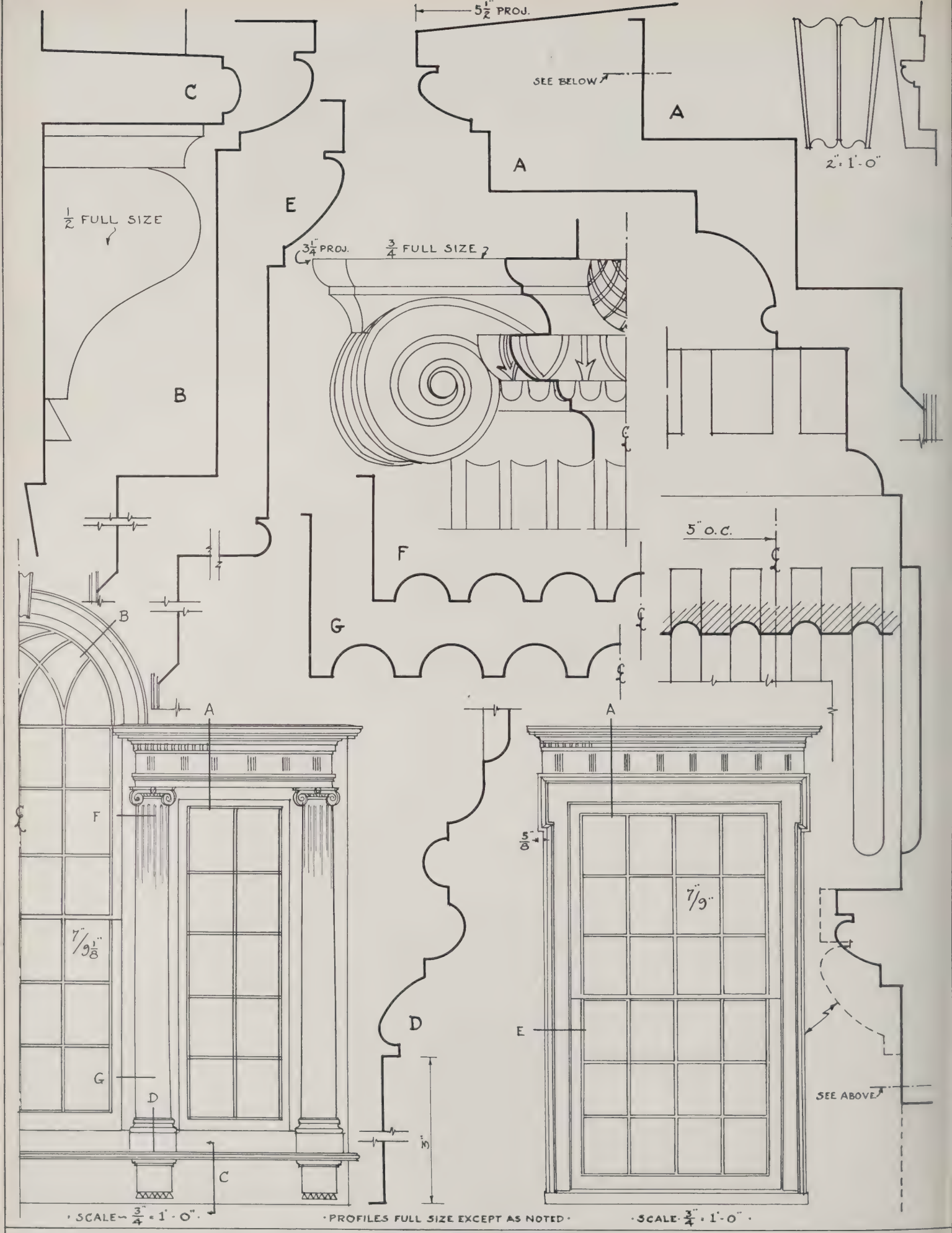
THE WHEELER-BEECHER HOUSE, BETHANY, CONN

BUILT 1805 DAVID HOADLEY, ARCHITECT

Measured and Drawn by Myron Bement Smith

The architrave over the Palladian window repeats that used on the other windows of the facade. The spring line of the arch coincides with the ceiling line of the upper hall, a fact that is quite ingeniously made almost inapparent by means of black paint applied to a panel set in behind the glass.





EARLY ARCHITECTURE OF CONNECTICUT

WINDOW DETAILS

Wheeler-Beecher House

Bethany, Conn.

David Hoadley Architect

MEASURED & DRAWN BY MYRON BEMENT SMITH



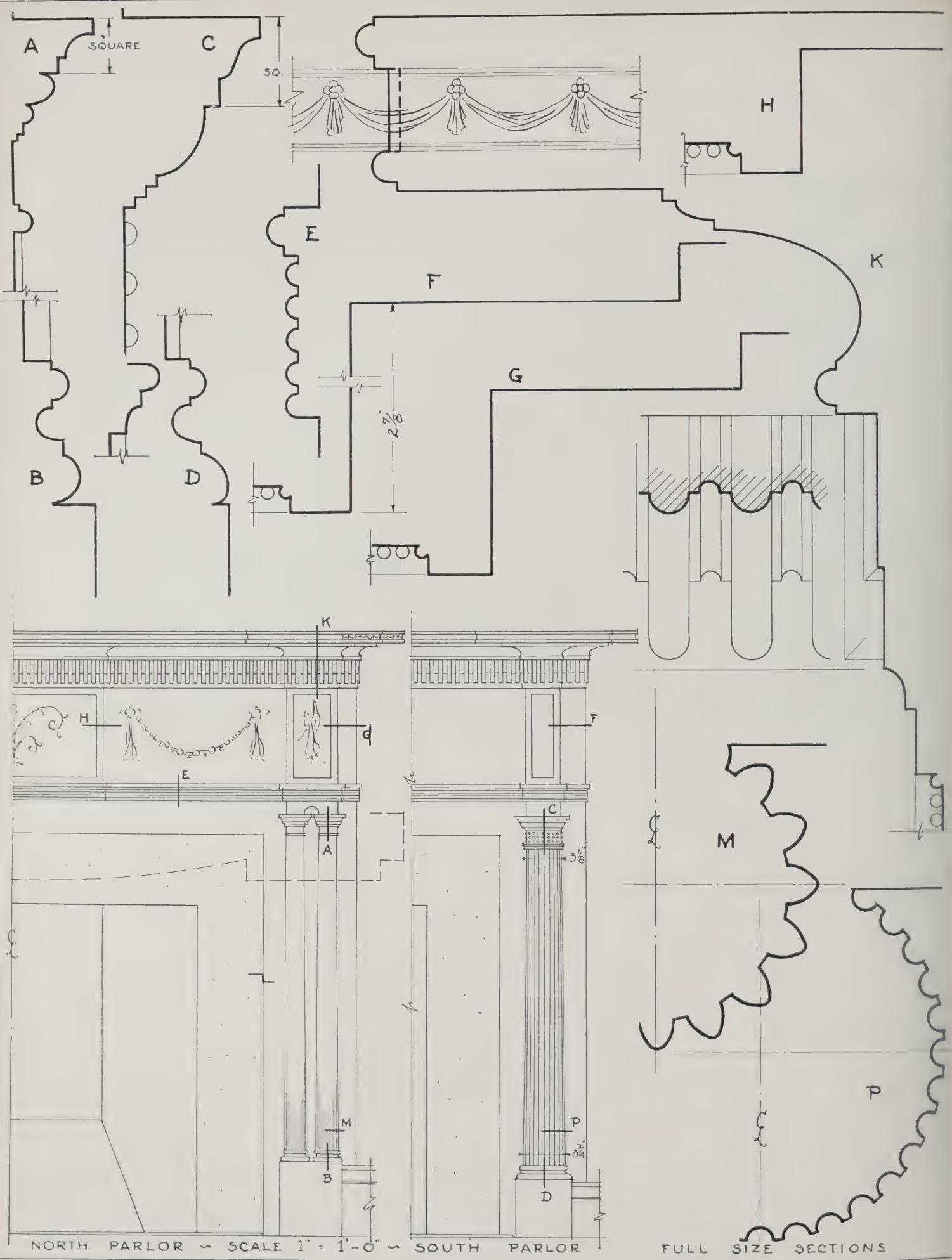
NORTH PARLOR MANTEL

THE WHEELER-BEECHER HOUSE, BETHANY, CONN.

BUILT 1805 DAVID HOADLEY, ARCHITECT

Measured and Drawn by Myron Bement Smith

The plate shows one of the two mantels, one in either parlor, that are the same excepting for the variation of columns. The papier mache ornament is not very successful and might well have been omitted. The north parlor mantel, with the coupled columns, is the more effective of the two.



EARLY ARCHITECTURE OF CONNECTICUT

TWO MANTELS

Wheeler-Beecher House

Bethany, Conn.

David Hoadley Architect

MEASURED & DRAWN BY MYRON BEMENT SMITH



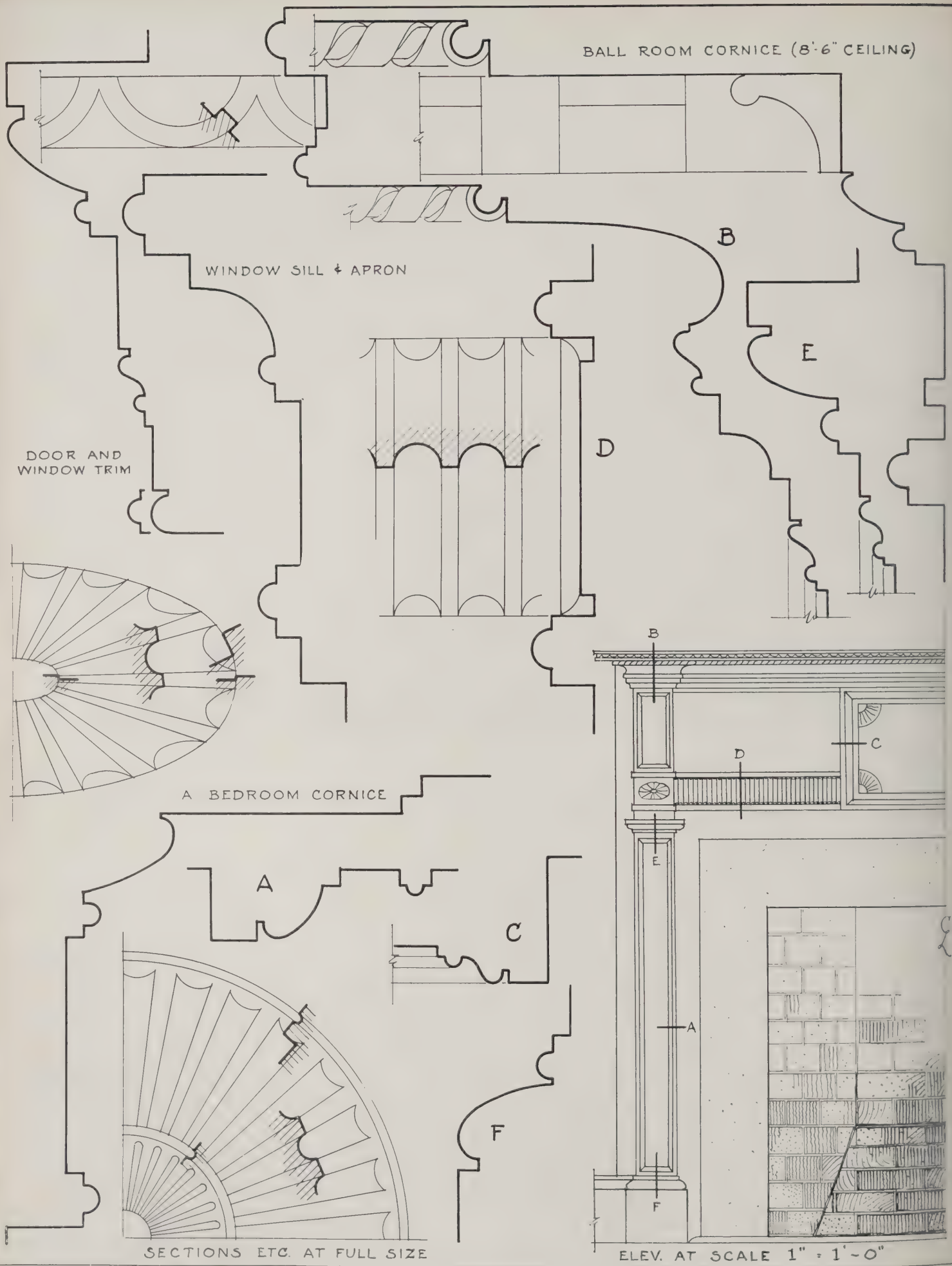
BALLROOM MANTEL

THE WHEELER-BEECHER HOUSE, BETHANY, CONN.

BUILT 1805, DAVID HOADLEY, ARCHITECT

Measured and Drawn by Myron Bement Smith

The ballroom is in the ell, over the kitchen and storerooms. It is a long, low ceiled room with two fireplaces, one at either end. The mantels are identical. A permanent seat is built along the side of the room. The cornice of the ceiling, owing to its beauty and delicacy, is worthy of study.



EARLY ARCHITECTURE OF CONNECTICUT.

BALL ROOM DETAILS

Wheeler-Beecher House

Bethany, Conn.

David Hoadley Architect

MEASURED & DRAWN BY MYRON BEMENT SMITH

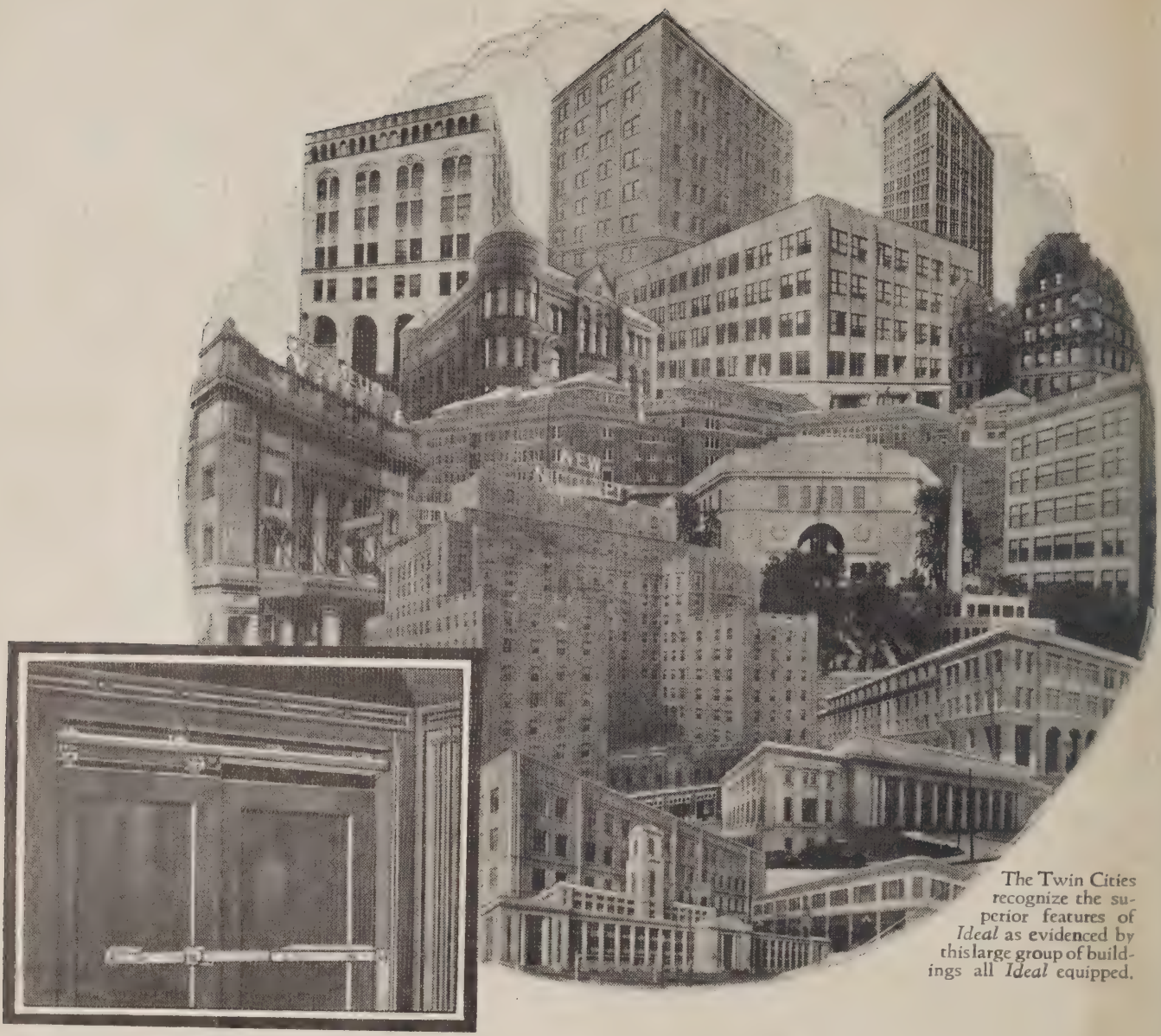
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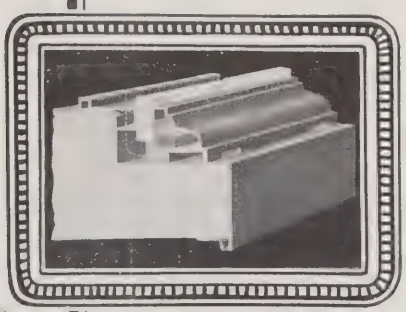
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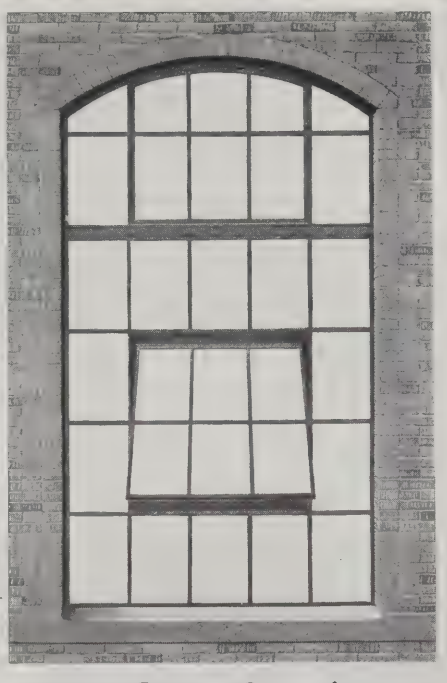
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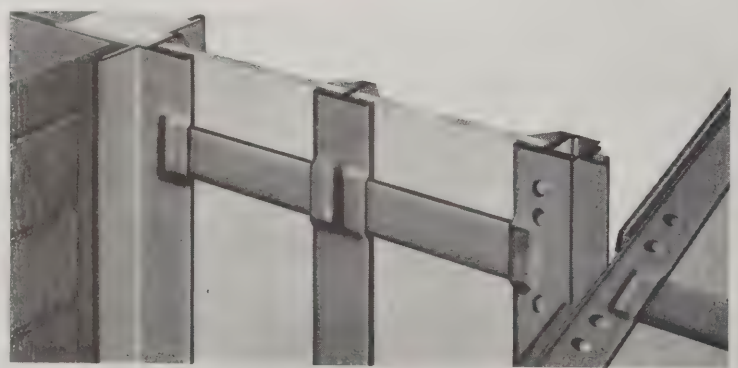
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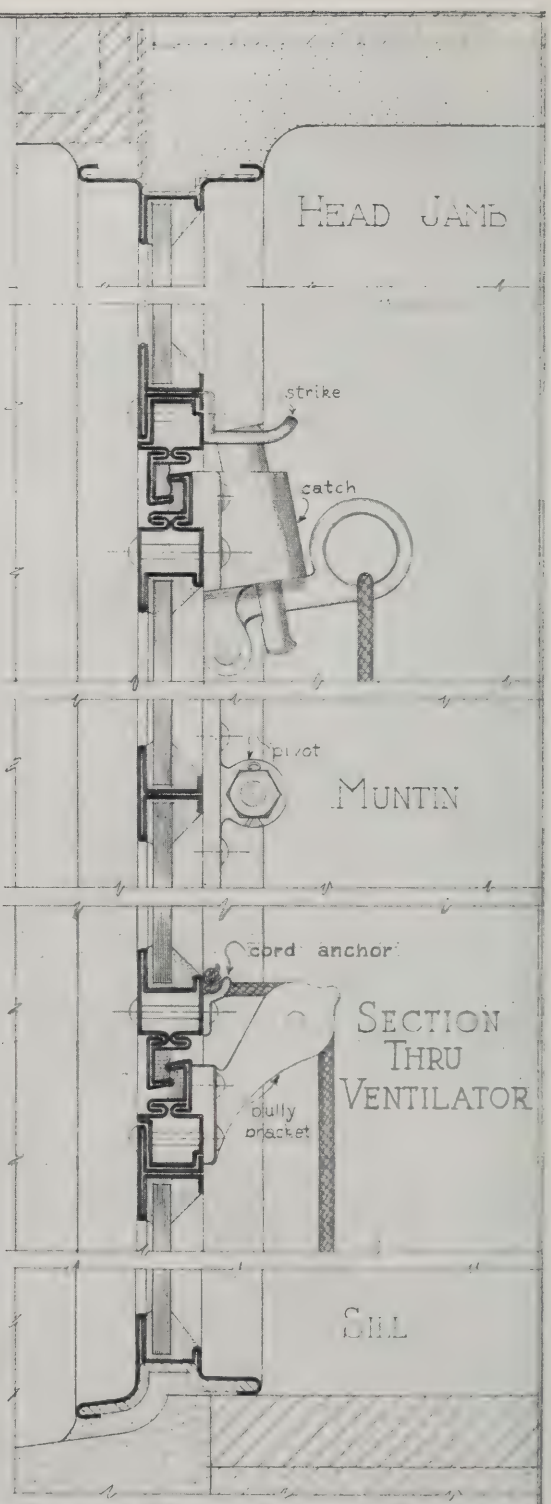
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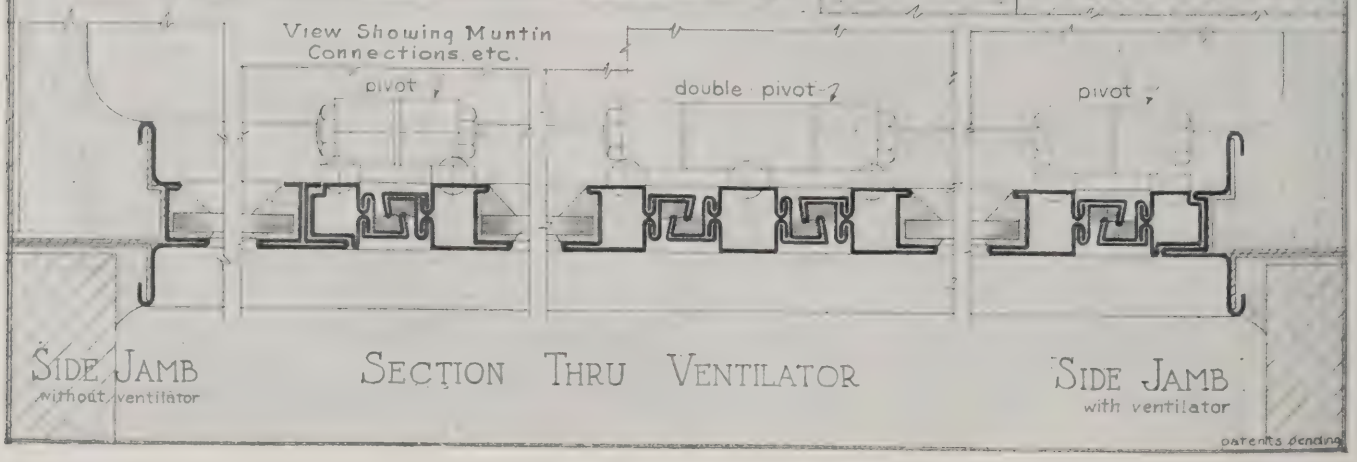
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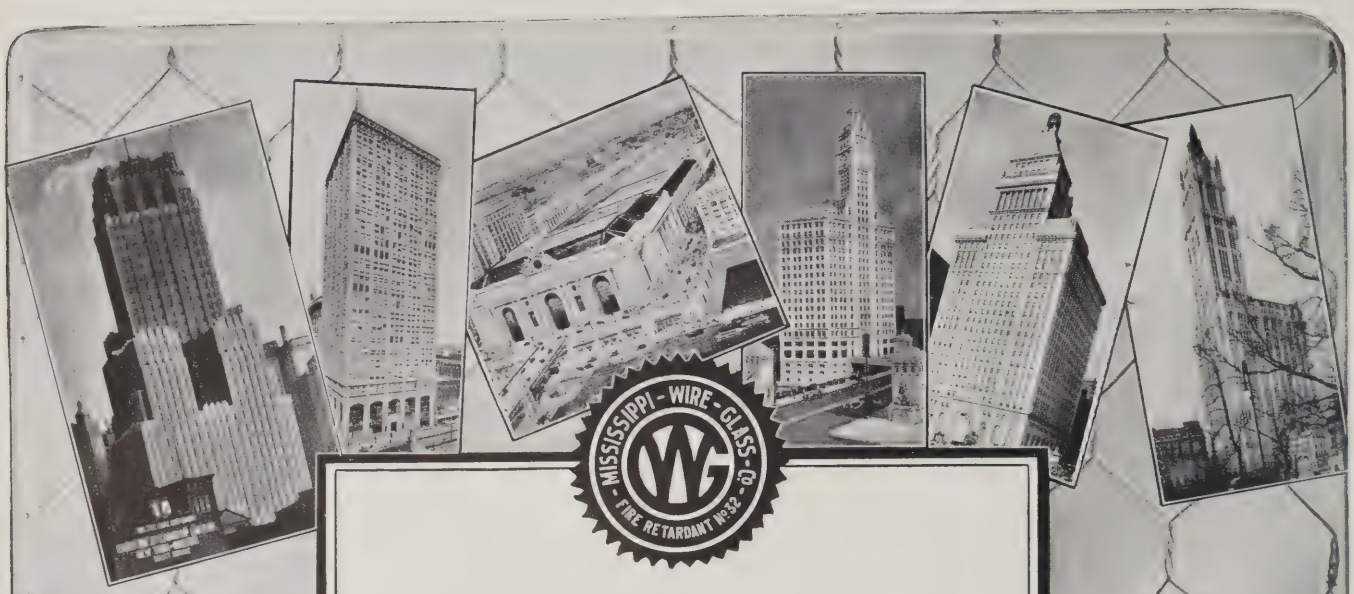
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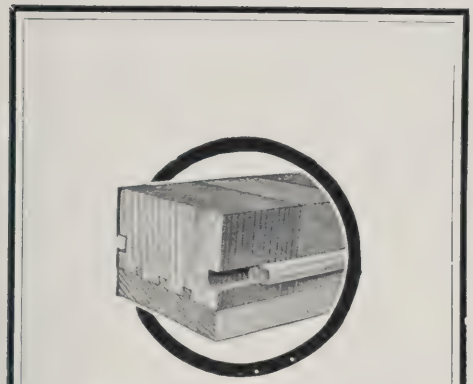
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BOOK DEPARTMENT

American Architecture of the Greek Revival Period

A Review by THOMAS E. O'DONNELL

DURING the last half-century there has been an ever-increasing number of publications on the various phases of early American architecture. Most of them, however, have had to do with the Colonial and American Georgian styles. Only within recent years have architects and historians turned their attention to the architecture of the time of the early republic, that formative period following the close of the American Revolution, when the old Colonial style was no longer considered an adequate means of expressing the newly acquired sovereignty of the United States. But in most instances these writers have hesitated to draw very sharp division lines, or to subdivide the types of the period into distinct and well defined styles.



Doorway on Beacon Hill, Boston
Illustration from "Domestic Architecture of the Greek Revival"

The architecture of the early republic was a transition style, between that of the colonial period and that of the present. It was a living, growing period, one in which builders were groping about in an attempt to find a style or manner of building to express the ideals of the people of the new republic. The movement began with the Roman classic ideas introduced by Thomas Jefferson and his followers, who saw a parallel between the old Roman republic and the new American republic and felt that the adoption of the old Roman architectural forms would be in keeping with the tendencies of the new republic. But the movement did not remain purely Roman. Important discoveries had been made of the ancient buildings of Greece, from which country it was known that the Romans had borrowed many of their architectural forms. Through the publications of Stuart and Revette, and others, the Greek forms became known to the architects and builders of Europe and America. The "Greek style" was taken up with enthusiasm by American builders during the first half of the nineteenth century. During this period Greek forms gradually replaced the Roman. Although the style was used in all classes of buildings, it seems to have been especially popular in residential work. It is this phase of the architecture of the early republic, known as the "Greek Revival," that Mr. Major has written upon so acceptably.

As a transition style, the Greek Revival holds a place of vital importance in the development of our American types, not only of the past, but of the present and future as well. A transition style is one that bridges the gap from an old and outgrown system to some new development, and is significant in that it contains the germ of future developments. The Greek Revival introduced all the classical elements and embodied all of the basic classic principles which have been the foundation of the bulk of our present-day American architecture, and which we have every reason to believe will continue to be the chief basis of our future architecture. In the past, the Greek Revival has been a much condemned style. The early builders, not having a full understanding of Greek forms, fell into many errors and perpetrated many architectural atrocities. But the style is not to be judged wholly upon the basis of the early examples left us, but rather upon its fitness and its possibilities. It is not an early American style for literal copying, but one to study for inspiration;—one upon which to build. The Greek Revival type, coming as it did at the same time as our early national architectural development, must be considered our first and true national American style. If the architecture of a country should be the logical growth and development of its simple beginnings, then the Greek Revival may justly and rightfully claim an important place as precedent for the future development of a national domestic architecture in America.

The writing of this book was the logical and commendable outcome of a search for a true American residential type of architecture. The writer, tiring of all the modern "tendencies" and copying of foreign styles, looked about for a true American expression, and found

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It would be impossible to over-emphasize the value of this work to anyone interested in its subject.

223 pages. 9¾ x 12¾ inches. Price $5.

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it in the Greek phase of the architecture of the early republic. Finding that there were no reference works existing on the style, he began a personal search for actual examples of structures left us as a heritage,—a heritage until now much neglected and little appreciated. Through extended and thorough research, a great many illustrations of existing buildings were collected, and they have afforded the first adequate study of the subject. The book is the final result of this comprehensive study. The subject is very thoroughly and clearly discussed under the chapter headings: An American Style for Americans; The Inception of the Style; The Development of the Greek Revival; Materials and Arrangements; Variations and Structural Details; and The Development West of the Alleghenies. That the Greek Revival was, and is today, a style admirably suited to work in all sections in our country, whether in the East, West, North or South, is convincingly shown by the many full-page illustrations of the best examples from the Atlantic seaboard; the old Northwest; the south Atlantic seaboard, and the old Southwest. The publishers have coöperated with the author to make this an excellent book. It is printed and bound uniformly with the finest volumes of the Lippincott series. Through the publication of this pioneer work on the Greek Revival, Mr. Major has made a great contribution to the history as well as the development of domestic architecture in America.

THE DOMESTIC ARCHITECTURE OF THE EARLY AMERICAN REPUBLIC; THE GREEK REVIVAL. By Howard Major. 236 pp., 7½ x 11 ins. $15. J. B. Lippincott Company.

AMERICAN CLIPPER SHIPS; 1833-1858. By Octavius T. Howe and Frederick C. Matthews. Volume 1. 372 pp., 7 x 10 ins. Price $7.50. Marine Research Society, Salem, Mass.

IT is not always realized that architecture includes the designing and building of vessels which sail the seas as well as of structures which stand on terra firma. Builders of the great ships which constituted England's boast from the days of the Armada onward were regarded (and rightly) as eminent as naval architects and as necessary as were the architects who planned the town mansions and the country estates which were also England's pride. The annals of American naval architecture include no such period of great achievement. Perhaps the brightest passage in those annals is that which has to do with the clipper ships "developed from the fine fast vessels of war built in France, which prior to 1800 had the reputation of being superior in speed to any other sailing vessels afloat." The American vessels, however, were built not for warfare, but for commerce, and shipyards from Maine to Georgia were busily engaged in building and fitting the clippers which, driven by the wind in their broad, swelling sails, long carried the stars and stripes into all the harbors of the world.

The Marine Research Society, of Salem, has for many years been engaged in collecting data concerning a period which now seems as remote as that of Salem's prosperity as a commercial port. The Society's editors have gone deeply into all available records of the time and have preserved matter which would otherwise have been irrevocably lost. But while the day of the clipper ships is gone, the building of vessels in America's shipyards has happily not yet ceased, and this volume, together with the many others which the Society has issued, has high value to architects concerned with shipping and ship building.



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FORGOTTEN SHRINES OF SPAIN. By Mildred Stapley Byne. 312 pp., 5½ x 8¾ ins. Price $5. J. B. Lippincott Company.

IN Spain, that most aloof and mediæval of lands, there exist many spots of which the ubiquitous American tourist has rarely even heard. The ages of faith brought into being countless little wayside shrines and chapels and many monastic houses for men or women, built for the convenience or for the entertainment of pilgrims, and the liberality of the travelers who thronged the pilgrimage roads made possible the development of these buildings upon a scale and in a manner which made full acknowledgment of architecture's claims to recognition. These old structures are still standing, even though the steady streams of zealous pilgrims are no more and pilgrimages themselves have now almost gone out of fashion.

This volume illustrates and describes some of these forgotten relics of Spain's fervently religious past,—old buildings, sometimes still in charge of religious of the orders which built them, but sometimes abandoned and deserted, with briars and brambles choking up their beautiful Romanesque or Gothic cloisters. One of these old monasteries is that in the extreme southwest of Spain at which Christopher Columbus and his young son were hospitably received by the monks one day toward the end of the fifteenth century. The volume has been prepared with Mrs. Byne's usual skill, which makes the most of historical interest as well as of architectural merit. The work, and particularly its illustrations, possess considerable interest for architectural students, and the rich simplicity of the buildings and their dependencies and accessories is quite as beautiful in the early decades of the twentieth century as when they were built, four, five or more centuries ago. The volume abounds with suggestions which a resourceful architect could quite easily turn to good account, for the designs of these old buildings were founded on principles which do not change.

THE STUDY OF ARCHITECTURAL DESIGN. By John F. Harbeson. 309 pp., 8½ x 11¾ ins. Price $7.50. The Pencil Points Press, New York.

SUCCESS of the teaching methods in vogue at the Ecole des Beaux Arts has brought about their wide following elsewhere, notably at the atelier conducted in New York by the Beaux Arts Institute of Design. This work is a study into these methods by Mr. Harbeson, who is an associate professor of architectural design at the University of Pennsylvania and an instructor at the Pennsylvania Academy of the Fine Arts. The volume, which is prefaced by a foreword by the late Lloyd Warren, studies in considerable detail the system of instruction involved, explains many details with which architectural students should be familiar, and reproduces in countless illustrations famous structures which possess great importance to designers, as well as many drawings and plans submitted in competition. To add to its usefulness, the volume is quite thoroughly indexed, and one page is given up to listing the French words used in an architectural atelier, with which one should be familiar.

A Notable Work on English Architecture



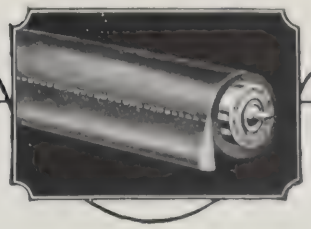
THE most popular and widely used type of architecture in vogue in America today is unquestionably that version of the English Renaissance used during the reigns of George II and George III—or rather the American adaptation of the current English style which is now known as "late Colonial." A correct understanding of the Colonial of this period is best had by studying the prototype from which it was evolved, the work of the great English architects who formulated the style which has ever since been representative of England's best. Mr. H. Avray Tipping gives a lucid and comprehensive history of the work of many famous architects of that time, among them the Adam brothers, who stand out prominently. They were the first to differ from the Palladian pedants and Rococo designers, and the architectural development of the Adam brothers had a profound effect.

THIS is a volume newly added to a monumental work on English architecture. Earlier volumes deal with the Tudor, Elizabethan, William and Mary and Queen Anne types, while in this volume the author sums up the architectural progress which culminated during the reigns of the later Georges. The work is replete with illustrations of exteriors and interiors, of great country houses as well as of manor houses and certain minor buildings which afford precedent for use in America today. It fittingly completes a comprehensive treatment of an important subject. It is a volume which in its usefulness will be of great value to architects whose work involves much use of Georgian design. To the student of English architecture it is necessary to complete his library dealing with design in the Tudor, Elizabethan, William and Mary and Queen Anne periods. It is superbly illustrated.

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Late Georgian, 1760-1820 *By H. Avray Tipping, M. A., F. S. A.* 402 pp., 10½ x 15¾ ins. Lavishly illustrated. Price $25

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CONTENTS *for* MARCH 1927

Automotive Buildings Reference Number

PLATE ILLUSTRATIONS	Architect	Plate
Baker Garage, Minneapolis	*Larson & McLaren*	33
Dodge Brothers' Sales Room, Detroit	*Albert Kahn, Inc.*	34
Packard Sales and Service Building, Detroit	*Albert Kahn, Inc.*	35
White Truck Co. Building, San Francisco	*Henry H. Gutterson*	36
Pierce Arrow Sales Building, Pasadena	*Marston, Van Pelt & Maybury*	37
Ford Motor Co. Building, Philadelphia	*Phillip S. Tyre*	38
Packard Sales Room, Washington	*George N. Ray*	39
Hotel Statler Garage, Buffalo	*George B. Post & Sons*	40
F. C. Cullen Garage, Denver	*J. B. Benedict*	41
Chrysler Sales Room, Pasadena	*John N. Cooper*	42
Pierce Arrow Building, Hollywood, Cal.	*C. R. Spink*	43
Buick Motor Co. Building, Denver	*Mountjoy & Frewen*	44
Studebaker Sales Building, Pasadena	*Frederick Kennedy*	45
Gotfredson Building, Los Angeles	*Morgan, Walls & Clements*	46
Lincoln Agency Building, Denver	*Mountjoy & Frewen*	47
Nash Show Room, Havana	*Cesar E. Guerra*	48
Bowdoin Square Garage, Boston	*Ralph Harrington Doane*	49
Lincoln Building, Hollywood, Cal.	*Harry L. Pierce*	50
Star Sales Building and Garage, Hollywood, Cal.	*Morgan, Walls & Clements*	51
A Show Room in San Francisco	*Marston, Van Pelt & Maybury*	52
Stutz Sales and Service Building, Hollywood, Cal.	*H. F. Haldeman*	53
Shop and Garage, Hollywood, Cal.	*Morgan, Walls & Clements*	54
Washington Terminal Garage, Newark	*Marshall N. Shoemaker*	55
Studebaker Building, Miami		56
Building for Lord Motor Car Co.	*Morgan, Walls & Clements*	57
Franklin Motor Car Co. Building, Hollywood, Cal.	*Morgan, Walls & Clements*	58
Studebaker Show Rooms, Brooklyn	*Tooker & Marsh*	59
Cadillac Corporation Salon, New York	*Charles E. Birge*	60
A Pierce Arrow Sales and Service Building		61
Biltmore Garage, Los Angeles	*Schultze & Weaver*	62
Studebaker Building, San Diego		63
Packard Station, Detroit	*Albert Kahn, Inc.*	64

LETTERPRESS	Author	Page
Cover Design: Cadillac Salon, New York *From a Sketch by Birch Burdette Long*		
The Editor's Forum		69
Guy Lowell; An Appreciation	*Ralph C. Henry*	71
A New York Street of the Future *From a Drawing by Hugh Ferriss*		*Frontispiece*
The Problem of Traffic Congestion, and a Solution	*Harvey Wiley Corbett*	201
Sales and Service Buildings, Garages and Assembly Plants	*Albert Kahn*	209
An Analysis of Carage Design	*Albert O. Larson*	215
The City Parking Garage	*Robert O. Derrick*	233
Heating and Ventilating Garages	*Walter Tusch*	257
Mechanical Equipment of the Garage	*Ralph Harrington Doane*	259
Layout of Automotive Buildings	*Harold F. Blanchard*	281
Architecture and Decoration of Automotive Show Rooms	*William F. Wharton, Jr.*	305

PARKER MORSE HOOPER, A.I.A. Editor

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The Gibraltar Bldg., of the Prudential Ins. Co., at Newark, N. J.
Cass Gilbert, Architect

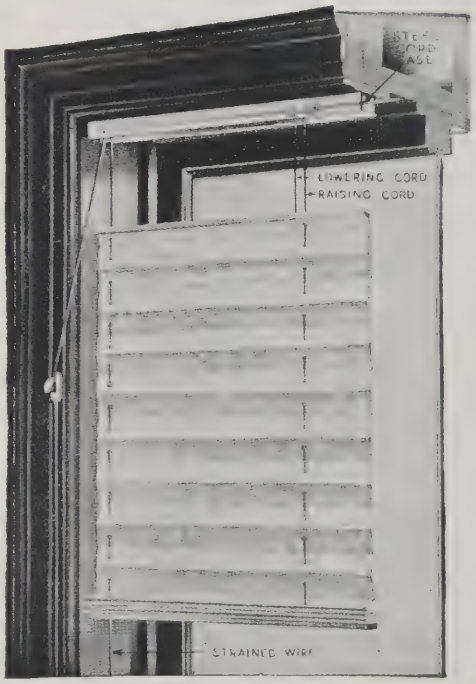
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THE EDITOR'S FORUM

NEW BUILDINGS IN WASHINGTON

AFTER considerably more than a century of neglect, progress seems about to be made toward realizing something of L'Enfant's plans for Washington. The opening session of the present congress appropriated $150,000,000 for public buildings, one-third of which, $50,000,000, is to be spent over a period of five years. In support of this project, Secretary Mellon, in a hearing before congress, declared that one of the outstanding considerations in the program of government building should be to place Washington in the first rank of architecturally beautiful cities. He cited Paris as an example of a city thrifty in business, an industrial center, and from the standpoint of planning and architecture a work of art. "It is generally recognized," he said, "that the really splendid nature of city development in Paris is responsible, in a large degree, for its number of visitors, and that this work has made Paris the artistic center of the world."

That this project and these ideals have the support of President Coolidge is evidenced by his own words in his recent message to congress. With reference to our capital city, the President said: "We are embarking on an ambitious building program for the city of Washington. The memorial bridge is under way, with all that it holds for use and beauty. New buildings are soon contemplated. This program should represent the best that exists in the art and science of architecture. Into these structures, which must be considered as of a permanent nature, ought to go the aspirations of the nation, its ideals expressed in forms of beauty. If our country wishes to compete with others, let it not be in the support of armaments but in the making of a beautiful capital city. Let it express the soul of America. Whenever an American is at the seat of his government, however traveled and cultured he may be, he ought to find a city of stately proportions, symmetrically laid out and adorned with the best that there is in architecture, which would arouse his imagination and stir his patriotic pride. In the coming years Washington should be not only the art center of our own country, but the art center of the entire world as well."

A NEW LOCATION

NEW YORK UNIVERSITY announces the removal to a new location of its Department of Fine Arts, Division of Architecture, which is now established at 9-11 East Thirty-seventh Street, New York. The Department offers evening and Saturday afternoon courses in architecture preparatory to examinations for the diploma in architecture offered by the University and the Beaux Arts Institute of Design.

COMPETITIONS FOR FELLOWSHIPS

THE American Academy in Rome has announced its annual competitions for fellowships in architecture, landscape architecture, painting and sculpture. The competitions are open to unmarried men not over 30 years of age, who are citizens of the United States. The stipend of each fellowship is $1,250 a year for three years, with additional annual allowances of from $50 to $100 for material and model hire, and opportunity for extensive travel. Residence and studio at the Academy are provided free of charge, and the total estimated value of each fellowship is in excess of $2,000 a year. Under regulations revised this year for the competition in architecture, graduates of accredited schools will be required to have had architectural office experience of at least six months instead of one year, and men who are not graduates of such schools may enter the competition if they have had at least four years' architectural office experience and are highly recommended by fellows of the American Institute of Architects. Entries for all competitions will be received until March 1. Circulars giving full information may be secured by addressing Roscoe Guernsey, the Executive Secretary of the American Academy in Rome, 101 Park Avenue, New York.

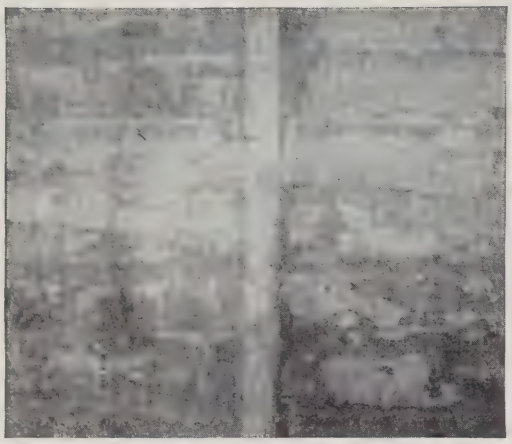
A PAN-AMERICAN EXPOSITION

PRELIMINARY announcement is made of the holding of the Third Pan-American Congress of Architects in Buenos Aires, July 1 to 10, 1927, the earlier congresses having been held in Montevideo in 1920 and in Santiago de Chile in 1923. At the same time, the Third Pan-American Exposition of Architecture will take place, and judging by the enthusiastic spirit shown by the architects of the countries invited, it is logical to expect a large attendance. Both the Congress and the Exposition have the sanction of the Argentine government, and the executive committee has already taken the necessary steps to have the official invitations sent out as soon as possible to the architects of all the nations of America.

The United States was officially represented at the First and Second Congresses, and at this time a large attendance of delegates is hoped for. Knowing the special interest taken by the American Institute of Architects in all matters concerning the betterment of the profession, the executive committee of the Third Congress has placed in its hands the work of organizing the attendance of the architects of the United States at the Congress and the Exposition. It is earnestly to be hoped that the architects of the United States will coöperate in every way to secure the success of the Exposition and the Congress.

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Guy Lowell

Born August 6, 1870; Died February 4, 1927

An Appreciation by RALPH C. HENRY

IT is the task of one better qualified than I to portray adequately the beautiful character of Guy Lowell, a character which shone through all his work and through all his rich human relationships; but I believe few have been privileged to know him more intimately, through all the years of his practice, and few have been so directly inspired and encouraged for so long a period by the force of his magnetic personality, and taste.



Guy Lowell, the architect, is too familiar a figure in the gallery of prominent American artists to require portraiture to his professional brethren or to his hosts of clients and friends. He has painted his own portrait in his chosen medium, with unfading pigments, with great boldness, with indelible impression, and he leaves behind him a legacy to the apostles of logic and good taste in architecture which is rich indeed. He has always measured up to my ideal of the most salutary influence of the Paris *Ecole* upon the American student,—that influence which produces not the American architect Frenchified, but the independent, original thinker who evolves his architecture from his brain rather than from his books, from his logic rather than from his legacy. Such architecture is virile, healthy, sure. His work was therefore always strikingly beautiful, original and sane. It is a distinct and most valuable contribution to the artistic record of the first quarter of the twentieth century.

Guy Lowell, the man, the loyal and generous friend, the friend of his humblest draftsman and office boy, is not so familiar a figure except to the fortunate few. His charming reserve and great personal dignity were never mistaken for haughtiness or for pride except by the clumsy in discrimination. He was always the artist, the man of imagination, the lover of the beautiful. He had hitched his wagon to a star and must needs hold his head erect. Each office day brought its need of prompt decisions required for progress in the gradual building up of designs, of decisions on matters of policy or of finance; but every day found room also for generous help to others in the office and in countless ways outside. In the morning it was frank acknowledgment of the skill and good taste of a competitor; at noon, the generous invitation to a luncheon; in the afternoon, a friendly and helpful criticism of the office boy's beginnings as a draftsman, when there might well have been time only for matters seemingly more weighty in the scale of dollars; in the evening, a broad tolerance of those who disagreed with him, and on the morrow just such another day in kind. His criticism was always clear, fresh, to the point, always constructive, always prevailing; unless, indeed, his open mind saw others' ideas as the better way; and in the process he developed architects rather than draftsmen, men capable of independent thought and ultimately capable of that self-confidence and self-respect which enabled them to assume real responsibility and reflect in their turn his own dominant characteristics. No one ever wore lead shoes in Guy Lowell's office: no one ever punched a time clock, and no one but counted the day too short for the work he had hoped to accomplish.

One interesting attribute, among the many which gave him unusual powers for diagnosis of the ills of his office force, was his quick sense of mental fatigue among his helpers. Good ideas sometimes came to them spontaneously; oftener they were the result of toil, as well as patient study, elimination, and polishing. The occasional bare spots were always to him the signal for a funny yarn or a diverting sketch of foreign experience having no more bearing upon the problem in hand than miniature painting has upon the quarrying of granite. Tension disappeared at the touch of his magic wand, and the atmosphere cleared at once. That was what he wanted and knew how to get! He lived a great, a full and a useful life. He leaves behind him a lasting memorial, not only in a wealth of beautiful structures, scattered over a continent, but also in the saddened hearts of the legion which has grown and profited through his potent influence and example.

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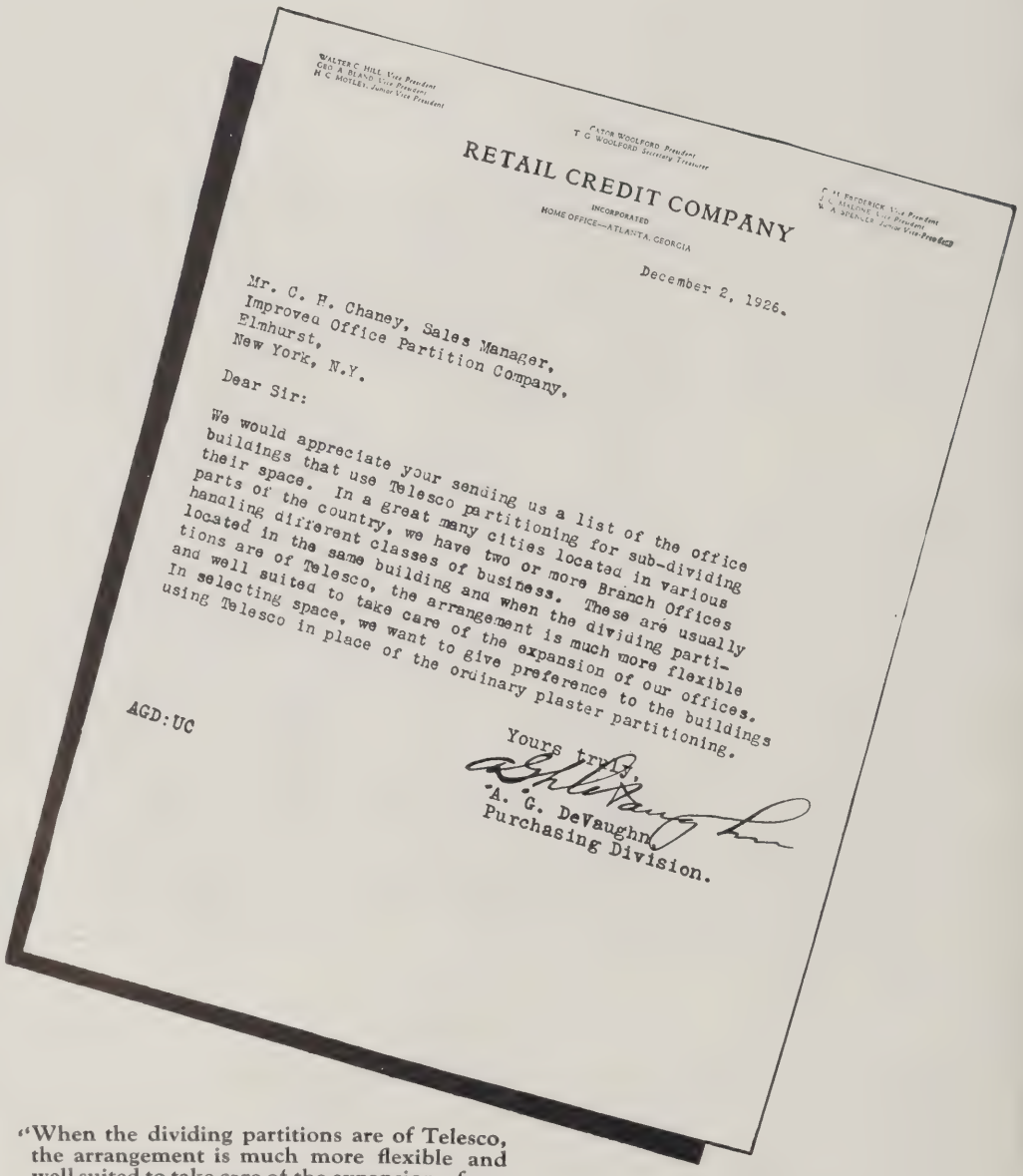
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The
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Volume XLVI MARCH 1927 Number 3

The Problem of Traffic Congestion, and a Solution

By HARVEY WILEY CORBETT

THE problem of planning for a city of the size and growing international importance of New York is so great, so involved and so complicated, embracing as it does so many and varied interests subject to multiple and diverse influences, that in order to make a beginning one must start by setting down certain limitations and then confine one's efforts within these limitations. In doing this, I realize that it necessarily excludes from consideration an infinite number of things which could and very properly should bear upon the problems I have in hand. I do not wish to underestimate or belittle the importance of any of these. In fact, before proceeding with this problem and defining the limitations under which I propose to work, I vigorously recommend that the fullest study be given to such general principles and fundamental considerations as:

1. The possible increase in the stringency of the "zoning for height" law, so that the bulk of future buildings may be limited, thereby limiting to some degree the increasing congestion in the streets, which naturally results from this increasing bulk.

2. The possible increase in the number and extent of "residence zones," so that workers may be nearer their places of employment, and the city thereby saved the economic waste resulting from transporting a great part of its population twice daily,—down town every morning, and home every evening.

3. The possible increase in "zoning for use," so that various types of manufacturing may be grouped with reference to the hours of workers, and to the movement of raw materials and finished products.

4. The possible application of the zoning idea to the complete elimination of certain types of manufacturing from the Borough of Manhattan; to the placing of theaters and places of public assembly at distances from each other great enough to avoid the crowding that now occurs in our present theater center; and to the purchase by the city of many small squares in "dead" zones, for the creation of small parks, which in New York are now lamentably few.

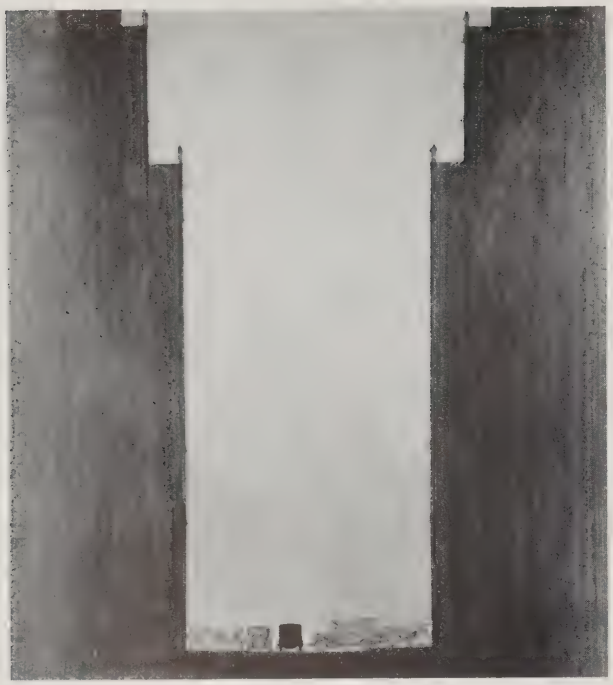
5. Possible increase in the police powers for the further control and regulation of street traffic; extension of the "pulsating" system for all crossings; regulation of hours for truck and van movements; limitation in the number and use of taxis and pleasure cars, with certain zones and hours for their use; limitation in the use of gas-burning motor engines; and even the possible ultimate requirement that deliveries and parking must be done within building lines, not on public streets,—a detail of great importance.

I believe that all of these principles,—and many more developed by engineers, sociologists, town planners and statisticians,—will eventually be put into effect. I find it difficult in discussing this subject to avoid drifting into these very questions, as the solutions they offer seem so alluring. We all have ideas along these lines and would be glad to offer them for whatever they may be worth, but we still feel that in spite of all these ideas being put into effect, the fundamental problem still remains unsolved. My belief is based upon the fact that a city is composed of human elements which may constantly present changing equations. The city may be likened to a living body, with arteries, veins, and capillaries. As the corpuscles of the blood carry the nutriment through the arteries, slow down to deposit it in the capillaries, take up the waste and carry it away through the veins,—so, metaphorically speaking, do the various forms of conveyance in the city carry the people and freight, which are the food of the city, through the avenues, slow down in the side streets, stop and deposit their loads in the buildings, take up new loads, and again continue the cycle. This movement of traffic is just as essential to the life of the city as the movement of the blood is to the life of the body. Thin traffic like thin blood represents an anæmic condition. Congested traffic, like excessive blood pressure, threatens the health of the body, that is to say, the normal and proper growth of the city. I view city planning as the study of the city's proper growth, and with this in mind have set down these limitations as what, after very careful study seem to be to be a basic method of procedure:

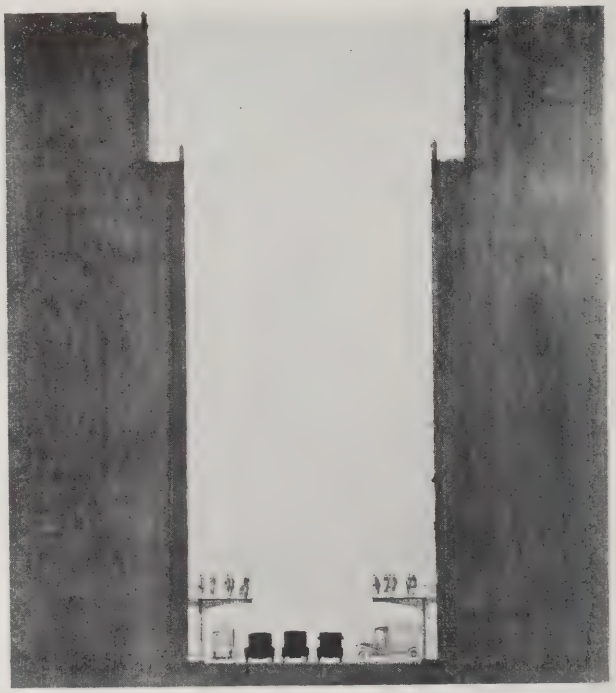
1. Increase in population and bulk of buildings, which is both necessary and desirable.

2. Fast movement of traffic of all forms, which is essential to healthy growth.

I feel that I must limit myself to the study of the physical aspects of the city as determined by these



Present Condition on an Average Street



First Step toward Improvement

two basic principles. Growth,—why is it both necessary and desirable? It is necessary because it is an essential element in the continued vitality of a city. The "dead" portions of any city are those which are not growing—i.e., not increasing in number and bulk of buildings. It is desirable because a great concentration of population in the business heart of a world city like New York makes for efficiency in business relationships and coöperative effort. Representatives from every part of the world can be in close business and personal touch with those from every other part. Circulation,—why is it necessary to growth? It is necessary because lack of it has already shown, in many sections of New York, that growth will stop for lack of food,—people and freight,—and a locality once "dead" is difficult to revive. Growth in number of buildings increases congestion in streets. Opening up the streets to relieve congestion makes way for increased circulation and for increase in number and bulk of buildings, and what seems to be a "vicious circle" is created. Can some method be devised whereby growth and open circulation can both continue without the one operating against the other?

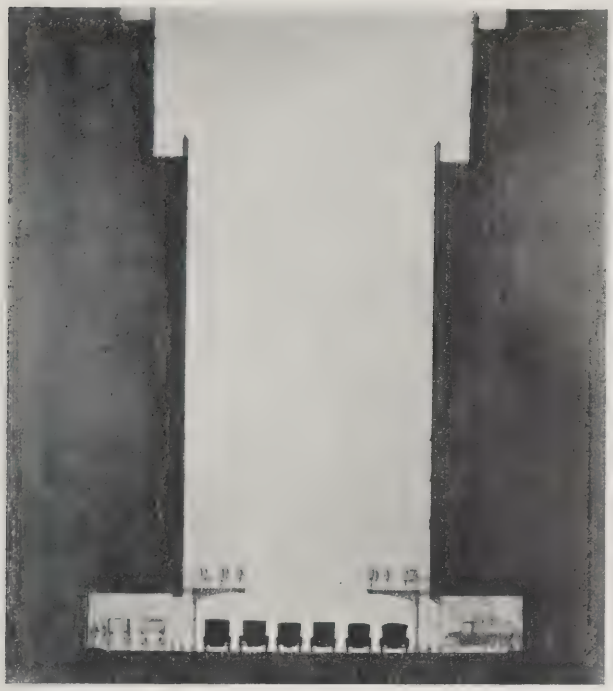
A study of the relation of building areas to street areas shows that in the standard "gridiron" section of New York for every acre of building area there is a half-acre of street area. This seems to be the largest proportion of street area to building area to be found in any large city in the world outside the United States. Therefore, I suggest this further basic policy as a guide to efforts in city planning, that the general relation of building area to street area should be kept as it is. Widening existing streets or cutting new streets is always a "capital operation," because to be of any real value the widening or cutting has to extend for long distances and involves an endless number of individual property owners. To retain existing property lines, in principle, even though the city increases the restrictions over what may be done within those lines, is always simpler than any attempt to change those lines. I therefore question the desirability of a wholesale cutting of new streets or a widening of present streets, but since the city must grow, the streets must be increased in capacity, and since they can't be widened or increased in number, some form of double decking must be used. The double decking of streets is not a new idea. Leonardo da Vinci proposed it in a scheme to replan Milan. Most European cities have portions in which streets are at differing levels and have some form of double decking. Chicago has an important boulevard which is double decked for a considerable distance. But before proposing a system of double decking for the streets of New York it would seem only proper that a very careful study be made of traffic to determine if there is not a rational division or separation in the various forms of traffic, which could become the basis of determining the form and character of the double decking. I find that a careful analysis of traffic in all its forms leads one to the inevitable conclusion that it is of these three different and distinct types:

Foot: All forms of pedestrian traffic.

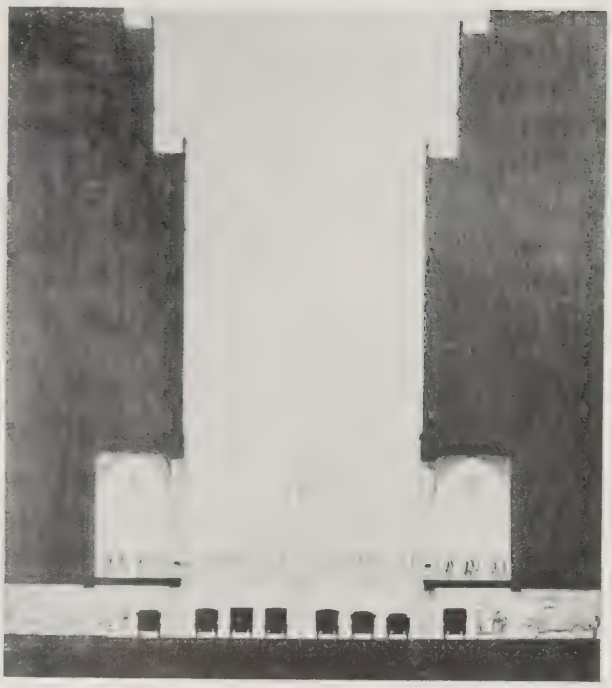
Wheel: All forms of vehicular traffic.

Rail: All forms running on fixed rails.

I feel, furthermore, that in the congested centers of the city, at least, these three forms of traffic (the horse is eliminated from consideration in the city) do not belong on the same level. It has been accepted as axiomatic that the "grade crossing" of roadway and railroad is a serious menace. Rail and



Parking Space Provided beneath Buildings



Arcaded Sidewalks within Buildings

wheel do not belong on the same level at the same point. Why should not this principle apply to wheel and foot traffic? In the United States over 12,000 people were killed by automobiles in one year. One can imagine the much larger number injured and maimed! It seems logical that some steps should be taken to correct a condition that each year becomes more serious. I find in studying these three forms of traffic,—rail, wheel and foot,—that rail, in its present form, at least, is the heaviest in weight, wheel next, and foot, of course, the lightest. Furthermore, of the three forms, wheel has increased beyond the bounds of all imagination, and is continuing to increase at a rate no one would attempt to estimate. On the other hand, rail traffic as a freight carrier, within the city, is certainly becoming less and less important, and as a passenger carrier, except in subways, is beginning to give place to wheel. It seems rational, therefore, in any scheme proposing to divide traffic into its three natural divisions through a process of double or triple decking the streets, that we start by placing the wheel traffic, the largest and most rapidly growing, on the present street level, which is already there and requires neither to be dug out nor built up; that all rail traffic be placed underground, as subways; and that foot traffic be raised one story above the street level, carrying bridges across at all corners, and at one or two points in the long blocks as well, so that people can move uninterruptedly throughout as large a district as is covered by the expansion of the double decking idea. Double decking, while difficult, is not impossible.

I recognize the almost insurmountable difficulties of the problem and the very radical nature of the suggested solution, and yet I believe such a solution can be brought about by a very gradual process which will make it possible of realization. The most serious criticism of this proposed division of traffic in levels is not aimed at the principle of division; everyone seems to concur in the basic theory that such a division is sound logic, but it is aimed at the position given to the rail traffic. The idea that all future city population must spend a portion of each day underground where the air is of doubtful freshness, to say the least, and where artificial light is the only possible kind; that thousands would move from their homes into these holes in the ground, come out only to enter artificially lighted offices and then return to the underground and back to their homes after dark; that the one chance of most of the workers for getting a little fresh air and daytime outlook would be lost for six days a week;—these ideas are repugnant to every student of this problem. However, everyone agrees that rails could not remain on the streets or over them in elevated structures as at present, and they must go down, or else go far up, as has been proposed and is now being seriously developed, in so-called "airways," i. e., light suspension bridges of open construction supported by pylon buildings at station points, the rail level being so high, 200 feet or more above the city, and the type of car so light, that none of the objectionable features of the present "elevateds" would be retained. The real point about rails is that they must "go out of the picture" as far as the visual aspect of the streets is concerned. That matter has become a transit problem, on which many experts are now engaged. While I have many ideas on the subject, such as that just cited of a natural objection to subways, I do not consider transport by rail as part of the immediate problem. The division of traffic proposes to gradually remove all rails from the streets,

so that *where* they go does not concern us in solving the highly difficult and complex problem of traffic.

Before outlining in more detail this process of traffic division and the steps one would take in accomplishing the desired result, let us look for a moment at the future city. Let us assume that the steps suggested here have been taken, and let us see if the desired result is worth the effort we all realize must be made to achieve it. We see a city with sidewalks, arcaded and with solid railings. We see the smaller parks of the city, of which we trust there will be many more than at present, raised to this same sidewalk-arcade level, public parking space for autos being provided underneath, and the whole aspect has become that of a very modernized Venice, a city of arcades, piazzas and bridges, with canals for streets, only the canals will not be filled with water but with freely flowing motor traffic, the sun glittering on the black tops of the cars and the buildings reflected in this waving flood of rapidly rolling vehicles. From an architectural viewpoint, and in regard to form, decoration and proportion, the idea suggests all the beauty, and more, of Venice. There is nothing incongruous about it, nothing strange. The New York of the future, thus adapted to the requirements of a far greater population, is no stranger than the New York of today. But it will be infinitely more convenient and harmonious. In Venice there is the adaptation of a city to the necessities of the site on which it is built. The New York of the future will be an adaptation of the metropolis to the needs of traffic, freeing the city from the unsightly congestion and turmoil of the present. Pedestrians will move about through arcaded streets, out of danger from traffic, protected from the snows of winter and the glare and heat of the summer sun. Walking would become a pleasure, instead of, as it is now, one of the most hazardous of occupations; shopping would be a joy; the over-wrought nerves of the present New Yorker would be restored to normality, and the city would become a model for all the world. This seems worth while, worthy of a great effort, and it certainly warrants a trial,—provided, of course, that it accomplishes what we start out to accomplish, viz.:—a system of traffic division so perfected that the city can continue to grow and the streets can still take care of the increasing traffic.

If street capacity is to keep pace with the increasing number and bulk of buildings, an elastic method of enlarging the street capacity must be provided. How can this be done if streets are neither to be widened nor increased in number? I find in certain sections of New York, where buildings are now up to and beyond the bulk limit set by the zoning law, that traffic, in spite of one-way direction and many other stringent police regulations, still moves,—although it moves haltingly. I believe that if the existing capacity of such streets could be increased, say, several hundred per cent, the process being gradually applied, we would be safe in assuming that suffi-



Present Condition of Traffic Congestion



Elevated Sidewalks Provide Wider Roadways

cient capacity is assured for all time. Can such an increase of capacity be secured? Let us examine conditions in a typical cross street in the gridiron section, such as one finds between Fifth and Seventh Avenues in the thirties. Here we have only one-way streets, 30 feet from curb to curb. In order for business to continue, vans must stop in these streets, to load and unload, other trucks and vans must move through, autos must park at least temporarily. Even the casual observer notes that these streets are not only one-way, but that *one machine at a time* can barely get through! This one machine is often stalled for several minutes during which there is no movement whatever, and this is not caused by the stoppings at the corners for north and south traffic, but merely by stopping necessary to the life of that particular block. Assuming, then, that these streets at congested hours have only a one-machine roadway left open, that means that the effective street space is only at the most 10 feet wide. Let us now take the first step in this contemplated change of levels, and build a raised sidewalk the length of the block on both sides. This could be constructed on piers built a foot or two from building lines. The old sidewalks become additional street areas, the necessary room for loading and unloading vans and parking autos is provided, and the portion of street left free for moving traffic is increased from 10 to at least 30 feet, an increase in capacity of 200 per cent! Let us assume that this in turn becomes crowded in time. What is the next step? A law is passed, along with a building act similar to many already on the statute books, regulating the height of the second tier of beams of all future buildings in certain zones, also a fixed spacing of column points, and a certain clear arcade height on the second story level. When a block has been rebuilt (not so long a time as one might imagine, when one sees the rate at which buildings change in New York), the temporary cantilever sidewalk is removed, the new arcade sidewalk opened, and the space under the sidewalks opened for vans loading or unloading or for motor parking. The street width available for moving traffic has widened to 60 feet, an increase of 300 per cent, making a total of 500 per cent. Supposing even this to become crowded, what is the next move? Additional area under the buildings is taken for all motors at rest, the space under the arcaded sidewalks is taken for slow-moving traffic, and the street width has been increased in capacity by another 200 per cent!—and the process can continue, thanks to the fact that the foot traffic area has been raised, *ad infinitum*. In fact, it could continue until the entire surface under the buildings is available for traffic, if ever such a condition should demand it, and it is not impossible that it may.

We have been considering only a narrow cross street and have shown a method of gradually increasing its effective traffic capacity up to and even beyond 700 per cent! All this applies with equal or



Raised Sidewalks and Bridges Provide Safety and Street Space



Possible Architectural Treatment of Sidewalk Arcades



ELEVATED SIDEWALKS AND BRIDGES ACROSS AVENUES AND STREETS PROVIDE UNINTERRUPTED FLOW OF TRAFFIC



AN AVENUE OF THE FUTURE, SHOWING ELEVATED SIDEWALKS, PASSENGER CAR ROADWAY, AND TUNNEL FOR TRUCKS

greater force to the wide north and south avenues of the city. Their traffic capicity could be increased to the same extent by the same gradual process. But, as Mr. F. A. Delano has pointed out, this still leaves unsolved the conflict of *slow*- and *fast*-moving vehicular wheel traffic and, what is even worse, the crossing at the same grade of north and south with east and west traffic. He, therefore, proposes that the north and south arteries of Manhattan Island be double decked their entire width, providing thereby an uninterrupted upper level for fast-moving vehicles with connecting ramps to the lower level only at such points as the wide cross streets, such as 14th, 34th, 57th, etc. He further says that in undertaking this work we must begin where we can do the most good and where the need is greatest. The avenues near the water fronts are ideal places to undertake the high level development, because there the high level will extend the view over the water, and there the low level is needed for the trucking of freight and for the heavy rail and steamship traffic.

I am favorably disposed to this suggestion of the upper level boulevard or motor speedway along the rivers which flank the city. These marginal streets in most cases are very wide. The elevated speedway could be extended from the building line on the city side to half the width of the marginal street and provide an ample speedway. Furthermore, this speedway, being at the edge of the city, so to speak, would not have to be crossed to any great extent by pedestrians, it being years before the raised pedestrian level would be likely to extend to these river streets. Ample room could be found for the occasional access ramps from the general wheel level of the city, and because of the narrow shape of Manhattan Island, such an elevated marginal speedway would be easily accessible for fast-moving long distance traffic from any part of the city. I do not view with favor the idea of double decking, even in the distant future, of all north and south avenues. I feel it to be a wrong principle to close over these streets from building line to building line and to depend for ventilation of the space underneath, where the slow-moving and heavy gas-burning trucks would travel, on the narrow openings at the cross streets, and to rely on artificial illumination as the only means of making the lower level possible for traffic. Is there not some other effective way of separating slow and fast wheel traffic and of avoiding the conflict at the same grade of north and south with east and west traffic?

I concede that the pulsating system of traffic regulation, even when extended to the whole city, is still far from perfect and is now, even on Fifth Avenue, the cause of the most serious blocking of traffic that occurs. Let us examine for a moment the possibilities offered by some form of "basket weaving" the streets at the crossings. Remembering again that the foot traffic level has been raised, and that of necessity, the shopping level, store front level and business level have all gone up with it, one of the principal obstacles to "basket weaving" the streets has been removed,—that is the objection to a varying level of store fronts. Under our present system of street, sidewalk, and store front all on the same level, any change of grade such as occurs when one street passes over or under another, creates a condition bad for appearance and bad for business. But by raising the people and the shops we should have only the traffic to deal with, and "basket weaving" the crossings becomes comparatively simple, with the result that a motor could then move from any point in the city to any other point at any time without a single stop. I do not attempt to estimate what percentage of increase this would mean, but anyone who has noticed how rapidly a street clears when interruptions cease must realize that such a system would probably be the greatest factor of all in facilitating traffic movement. Now as to fast- and slow-moving traffic, two methods are possible,—one, that of reserving certain avenues for fast-moving traffic, as Fifth Avenue is now, and another that of reserving the central spaces of all avenues for fast-moving traffic. When one realizes that the effective width for moving traffic has been extended from building line to building line,—and that carrying half of each cross street under the avenues leaves the full effective width free for uninterrupted movement, it seems as if zoning the middle of the road for the faster moving vehicles should be sufficient to overcome the conflict of slow and fast traffic.

In conclusion, I believe that there is offered in these suggestions a solution of the traffic problem of New York, particularly of Manhattan Island, which is sufficiently comprehensive to meet all contingencies,—sufficiently gradual in its progressive development to be possible of realization. I therefore recommend to all groups of town planners that the basic principles of which I give a concise resume be adopted by all in the development of plans for the particular districts under their control.

BASIC PRINCIPLES

1. Growth of the city is necessary and desirable.
2. Circulation is essential to healthy growth.
3. Streets in their present area and number should be made sufficiently elastic for circulation.
4. Growth of streets is provided by traffic division.
5. Traffic division falls naturally into three levels, —foot, wheel and rail.
6. Foot traffic goes up one story, and takes sidewalks, shops and small parks with it.
7. Wheel traffic stays on the street level, extending under buildings to meet growing demands on capacity.
8. Rail traffic goes underground or up in the air and becomes a special transit problem outside the province of the architects.
9. Long-distance fast-moving north and south traffic is to have marginal elevated speedways.
10. Traffic interruption to be ultimately eliminated by what is termed "basket weaving" the crossings.

Sales and Service Buildings, Garages and Assembly Plants

By ALBERT KAHN

THE growth of the automobile industry has been the marvel of the past 20 years. Prophecies anent the futility of trying to make the horseless carriage move long ago took their place with the dodo and other like relics of the past. Even the more modern prophecies having to do with the "saturation point" have been very nearly forgotten. As the far-visioned man who conceived one of the vast automobile manufacturing groups remarked years ago, "there is no such thing as the saturation point." So the making and selling of motor vehicles for both pleasure and business goes merrily on, and no reason presents itself as yet for believing that any marked cessation in automobile manufacturing will take place. It was not commonly recognized in the early years of the history of the automobile industry how great a part the motor car would play in our transportation development. As we have come to realize that the business of transportation is the great keystone of our whole industrial structure, we have also perceived that the greatest single factor in the business of transportation is the self-propelled or motor vehicle, whether it be truck, motor bus or private motor car. The function of the railroad is becoming more that of carrying the long-haul traffic.

As automobile producing began to assume large proportions, the problem of the retail marketing of the product and the necessity of providing facilities for the care and repair of cars in the purchasers' hands became so great that it is not surprising that



Ford Motor Car Company Sales and Service Building, New York
Albert Kahn, Inc., Architects

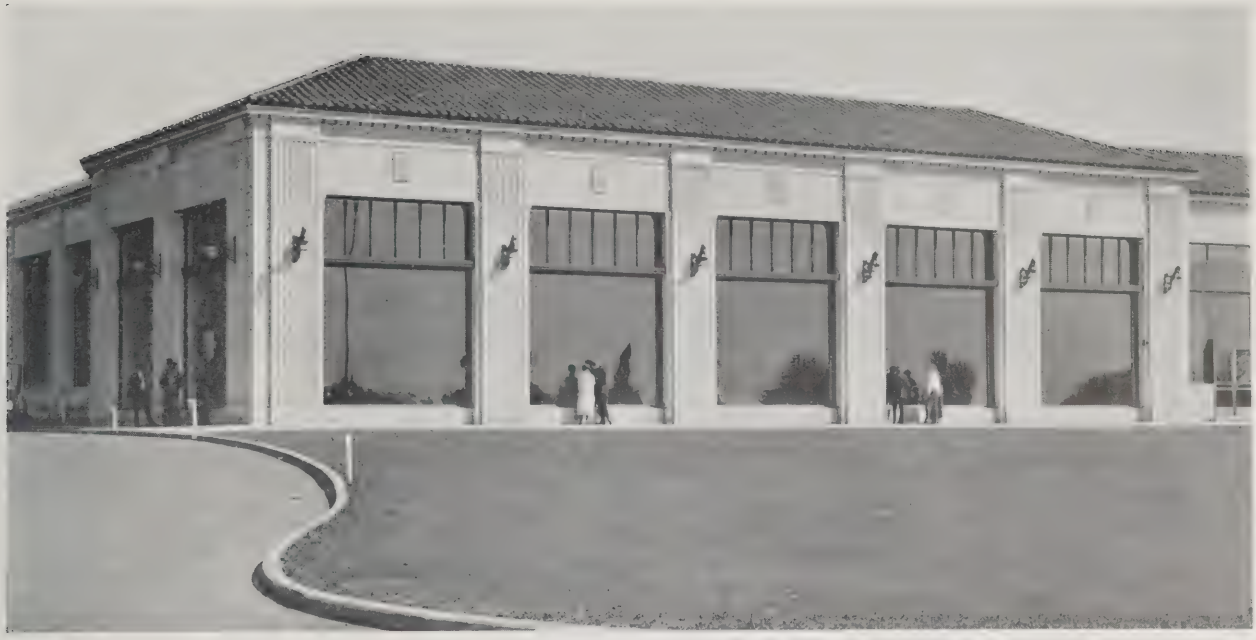


Ford Motor Car Company Assembly Plant, St. Paul
Albert Kahn, Inc., Architects

manufacturers were glad to shift this burden from their own organizations to those of dealers who conducted their own stores and garages. Very few of the manufacturers of motor cars now conduct their own service stations, although they must exercise a measure of control over them and in many cases possess a direct financial interest. It is, therefore, necessary to consider two distinct types of building devoted to the sale and upkeep of cars, as well as a separate type used by some companies as branch manufacturing buildings. The first type of sales and service building is that devoted exclusively to the sale of cars and their attendant service. Interesting show rooms are a part of such buildings. It is, of course, advisable that new cars be shown separately from used cars. Thus a secondary show room is required, —naturally of lesser importance architecturally, however important it may be from the standpoint of the dealer's profit. Accompanying such a sales room group will be found, in most cases, a garage and the necessary office space. In common with the experiences of manufacturers of automobiles who have found it desirable to eliminate, as far as possible, the vertical transportation of bulky materials, the modern service building is likely to be a single-story structure spread over a considerable area of ground. In some instances such structures are two or three stories high, depending on ramps rather than on elevators for transportation of cars from floor to floor. In truth, the extensive use of ramps in this type of



Workshop, Ford Motor Car Company Assembly Plant, St. Paul
Albert Kahn, Inc., Architects



Ford Motor Car Company Exhibit Department, Assembly Plant, St. Paul
Albert Kahn, Inc., Architects

building is a striking example of modern adaptation to changing conditions. The plan of the Richards-Oakland Service Building, now under construction in Detroit, shows a typical example of the use of ramps.

The problem of servicing the automobile is so important that dealers usually endeavor to provide well for this particular feature of their work. In congested localities, where land is particularly valuable, it has been found desirable to separate the sales and service departments in different buildings. Thus, we find a building like that of the Packard Motor Car Company of New York, which is now being erected on Eleventh Avenue, and near by a similar structure erected a few years ago for the Buick-Oakland Companies' service. The use of different parts of the same building by two different makers of cars, as in the case of the Buick-Oakland Service Station, is exemplified in a much more striking manner in the case of the General Motors Building in Detroit.

Plants for the manufacture of motor vehicles resolve themselves into two types. In the one we find a large central factory, where the entire product is manufactured. The factories of the larger and higher priced cars generally come under this head. In the case of the makers of smaller cars, such as the Ford and the Chevrolet, we find that much of the product is manufactured in one plant and assembled in different plants scattered about the country.

The modern tendency toward the building of one-story structures, located in places where the price



Exhibit and Sales Room, Ford Motor Car Company Assembly Plant, St. Paul
Albert Kahn, Inc., Architects



Dearborn Engineering Laboratory, Dearborn, Mich.

of land is low and where railroad facilities are satisfactory, has been given a considerable impetus by the foresight of large automobile builders in erecting this type of construction. The management of an assembly plant does not greatly concern itself with the retailing of cars. Nevertheless, in some instances, show rooms are provided even in these assembly plants as a convenience to the district dealers for demonstration purposes. They are also of considerable advantage to the small retailer, affording him the opportunity of showing a prospective customer the full line of cars, which he will not always have room to show or the funds to keep on display.

The development of the large commercial garage constitutes a considerable subject by itself. Much has been written regarding this type of structure, and the construction of such buildings can no longer be classed as general news. There are a few principles in the designing of garages, however, which are worthy of consideration. The plan adopted in the



Detail, Dearborn Engineering Laboratory, Dearborn, Mich.
Albert Kahn, Inc., Architects



Dearborn Engineering Laboratory, Dearborn, Mich.

Fort Shelby Garage, Detroit, has proved successful. The entire floor is given a slight incline of approximately 4 per cent,—one-half the story height being negotiated in one direction, the other half in the opposite direction. The turns at both ends are inclined about 15 per cent. Thus it is posbsile to drive continuously from the entrance to roof, four stories above, without mounting any sharply pitched ramp. The cars are parked upon these inclined floors as shown in the illustration on page 214. The floor construction spans the entire distance of 50 feet. In this building the typical spacing of columns is 21 feet, 3 inches by 50 feet. The building is situated on a corner, the portion adjoining the more important street being constructed with a level floor. The lot being 130 feet wide by 150 feet deep, only two of the 50-foot widths are thus inclined. The only objection which has been found to this garage is that the building could not be used for other purposes. This, however, would hardly seem a just criticism, since



Main Entrance, Dearborn Engineering Laboratory, Dearborn, Mich.
Albert Kahn, Inc., Architects



Ramped Floors, Fort Shelby Garage, Detroit
Albert Kahn, Inc., Architects

garages have become as much of a necessity as have hotels, office buildings, theaters, etc., each of which is distinctly planned for its one and only purpose.

In many large garages an improved plan is used. In these the floors of two adjacent units are staggered, and inclines form passages from one level to the other. The result in this type is, therefore, the same as in the inclined type of the Fort Shelby Garage in that cars may be driven continuously from ground to top floor. The garage lately built for the *Detroit News* has been built on this latter plan.

A notable thing about the garage buildings mentioned here in the long-span construction. The width of the spans between the columns in these buildings allows practically clear floor space for both parking and aisles, eliminating free-standing columns.



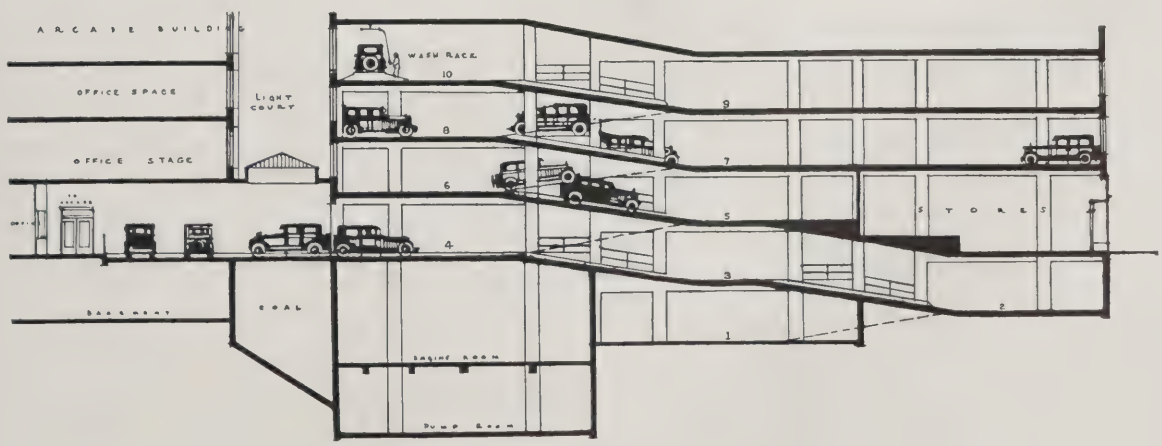
New Building for The Detroit Garages, Inc., Detroit
Robert O. Derrick, Architect

An Analysis of Garage Design

By ALBERT O. LARSON

THE problem of parking automobiles in the business district of a city has resulted in an intensive study of the possibility of utilizing expensive downtown property for garage purposes. The cost of such property is ordinarily so high that in order to get a location convenient to office buildings, theaters, etc., the plan must be such that the greatest number of cars can be accommodated at a minimum construction and operating cost.

The staggered floor system with ramps probably results in the greatest amount of storage space in a given area and represents the only solution for the exit of several hundred cars within a few minutes each day, which would be impossible with any system of elevators. The amount of space required for enough elevators to take care of rush hour traffic together with the cost of operation, more than offsets any possible advantage that elevators might have. A study of car sizes and the amount of area required for their storage shows that an aisle, with cars parked on either side, should not be less than 50 feet or more than 55 feet wide; therefore, a garage plan should be in multiples of 50 feet in at least one direction,—that is, the waste of space in a lot 80 feet wide is too great to make possible economical planning. The spacing of columns is very important. Contrary to the general belief, the elimination of all columns in a parking garage is of no advantage, because of the difficulty of maintaining definite stall divisions and the consequent waste of space by diagonal parking. Two systems of handling cars are being used in public garages. In the first instance, where all the handling of cars is taken care of by the attendants, the three-column bay may be advisable in that there is a slight saving of space, and if the garage is used at all for truck storage, such an area will accommodate two trucks. In garages where the cars are driven to the stalls by their owners, a two-car bay will be found preferable. This arrangement minimizes the amount of damage done to cars in parking. Ramps should not, in any event, be less than 20 feet wide in the clear, which allows two cars to pass each other. With narrower ramps, it is necessary during rush hours to maintain one-way traffic which greatly slows up service. An important item in the locating of ramps is that the visibility from floor to floor be as clear as possible, with no such interruptions as elevator shafts, closed-off rooms, or stairways. A practical grade for ramps is from 15 to 17 per cent. Steeper grades will result in frequent accidents on account of poor brakes. It is important that the finish of the ramps be roughened to prevent skidding. The use of grooves has been found unsatisfactory, because of the collection of dirt in them, and also because the spaces between the grooves get slippery. By far the most economical and satisfactory finish, both for ramps and aisles, is a rough wood or carpet float finish. The use of a



Cross Section of the Baker Garage, Minneapolis
Larson & McLaren, Architects

metallic hardener in the finish will add years to the life of the floors, important, since they are much used.

The ceiling heights in garages should be governed entirely by the usage. If truck storage is to be accommodated, ceiling heights will have to conform to the required clearances, but if the garage is to be used solely for the parking of pleasure cars and possibly light delivery trucks, a clear ceiling height of from 8½ to 9½ feet is entirely adequate. Where a limited amount of truck storage space is required, construction costs may be reduced by limiting such storage space to certain parts of the lower stories.

The mechanical equipment in a garage is as important as the general planning. By careful study, the cost of such equipment can be kept within a reasonable proportion of the total cost. The number of floor drains required need not be large if they are properly located. The proper location for drains on a storage floor is at the rear of the line of stalls, rather than in the aisles. If melting snow runs off the cars into the aisles, the danger of skidding is greatly increased. Men's and women's toilets should be located conveniently to the entrance, and provision should be made for accommodations for the garage employes, possibly in the basement. Air and water should be provided at a central location on each floor, since they are required for many uses.

A considerable saving in operating cost and on the initial installation can be made in heating by the use of fan-driven unit heaters instead of either cast iron or pipe coil radiation. One unit should always be provided facing each door to the outside. Ample heating at these points will eliminate use of a good many heating units on the upper floors. In ramp garages, in particular, it will be found that very little heating will be necessary on the upper floors on account of the easy rising of heat up the ramps. Care should be taken that the bottom of any unit heater is sufficiently high above the floor for car clearance, otherwise injury to vehicles might result.

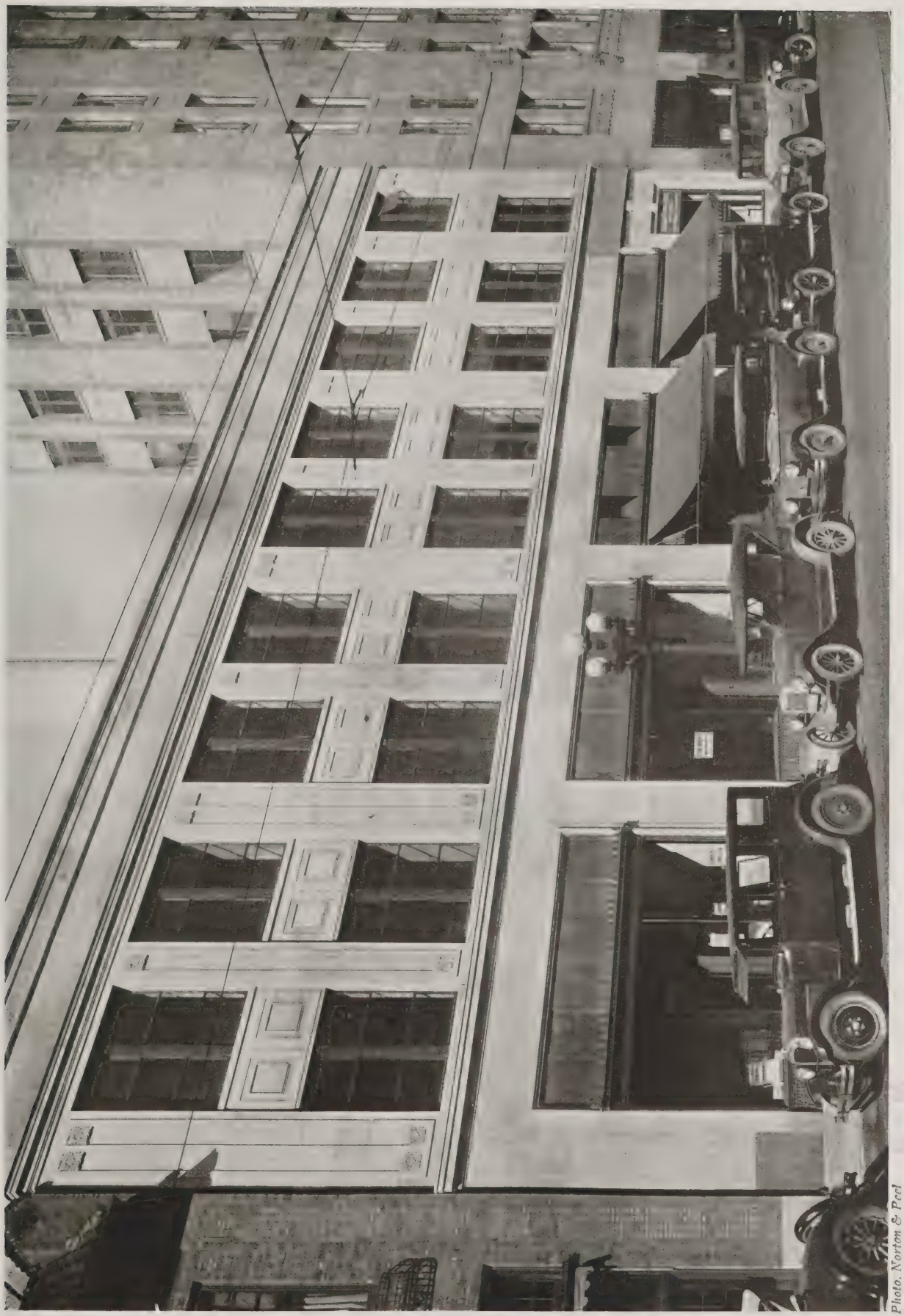
The illumination needed in a garage may be confined simply to rows of lights from 15 to 20 feet apart in the main aisles and ramps. A generous amount of illumination should be provided in the ramps and at the entrances. These lights should all be controlled from a master switch in the office, thus preventing the necessity of having the garage attendant go up through the building to turn lights on and off, a detail more important than it might seem.

A number of satisfactory door openers are on the market, but the points to be considered chiefly are simplicity of design and control features. The operator with worm gear, operated directly from a motor, is possibly the sturdiest built. It has the instantaneous reverse feature, which enables the garage attendant to immediately reverse the action of the doors at any point. Numerous accidents will take place with any type of operator which has to complete the full closing or opening action before being reversed. Careful attention should be given this detail.

The operations of greasing and washing in the modern garage may be made profitable if ample provisions are made for this work. Grease racks which are open clear to the floor, or the pneumatic type, which raises the car on a platform above the floor, are to be preferred rather than the open pit in the floor, which represents a real hazard to the life of the garage mechanic on account of accumulation of carbon monoxide gas. Ample space should be allowed for washing and polishing. A rack for the washing and cleaning of the chassis, raised about 2 feet above the floor, will cut the labor of such washing down one-half. The washing and polishing of the body are better done from the floor level. Various patents have been devised for washing cars, most of which are either very expensive to operate or are so positive as to destroy the finish on the cars. The system used in most of the largest garages consists simply of an overhead hose connected from an ordinary mixing valve with both hot and cold water. A practical arrangement for washing is with two men on the chassis and two men on the washing and polishing of the body. The time required for washing with such an arrangement may be computed at 15 minutes for the chassis and 15 minutes for washing and polishing the body, making what is really a unit cost of one hour's time for one man per car.

The whole operation and management of a public parking garage have grown from a haphazard, hit-or-miss proposition to a scientific business, and proper handling, together with a well-planned building, will put such a business on a revenue-producing basis. A good example of the latest type of a large city parking garage is the Baker Garage in Minneapolis, which was planned as one unit of the Terminal Block development, which covers an entire city block in the center of the business district. The large size of the city blocks of Minneapolis often means the loss of a great portion of the inside lot arrangement. In this development the diagonal arcade through the block, with shops and a large garage, has meant the utilization of the entire ground area of the block on a high rental-producing basis. The Baker Garage has utilized a patented ramp construction involving staggered floors with ten levels and provision for the future construction of 18 additional levels. The size of the building is 100 by 155, with additional space on the ground story. The construction is reinforced concrete throughout with removable metal forms. The first story has a double entrance, with office, women's waiting room, etc. Two greasing pits are located on the first floor, and the tenth level has been utilized for the wash racks.

The successful operation of a city service garage is now attended with so much competition that it requires the most careful and ingeniously thought out planning and equipment to render it possible at all. To provide such planning and equipment is of course the function of the architect, and to do this he must avail himself of every aid and adjunct which experience can suggest or skill provide. It is particularly difficult in that no two instances are alike.



BAKER GARAGE, MINNEAPOLIS
LARSON & McLAREN, ARCHITECTS

Photo. Norton & Peel



DODGE BROTHERS' SALES ROOM, DETROIT
ALBERT KAHN, INC., ARCHITECTS

Photo, George W. Hance

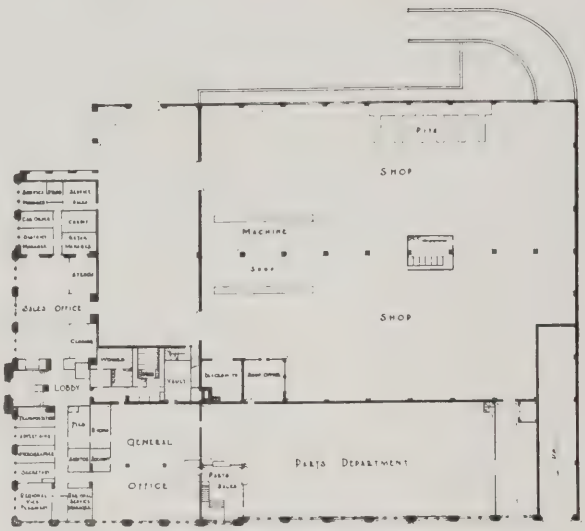


PACKARD SALES AND SERVICE BUILDING, DETROIT
ALBERT KAHN, INC., ARCHITECTS

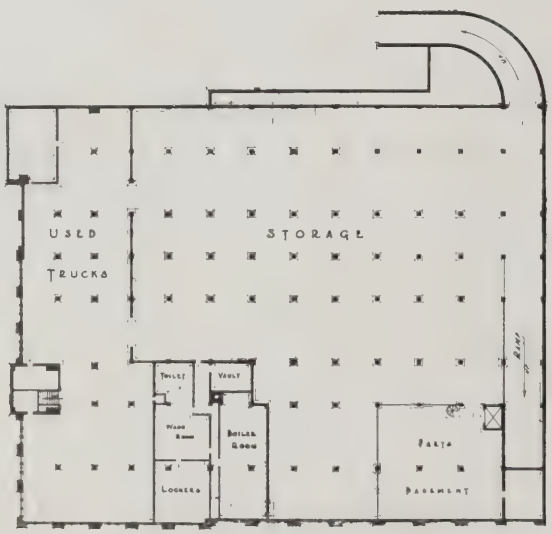


Plans on Back

WHITE TRUCK CO. GARAGE AND SERVICE BUILDING, SAN FRANCISCO
HENRY H. GUTTERSON, ARCHITECT



MAIN FLOOR



BASEMENT

PLANS, WHITE TRUCK CO. GARAGE AND SERVICE BUILDING, SAN FRANCISCO

HENRY H. GUTTERSON, ARCHITECT



PIERCE ARROW SALES BUILDING, PASADENA
MARSTON, VAN PELT & MAYBURY, ARCHITECTS

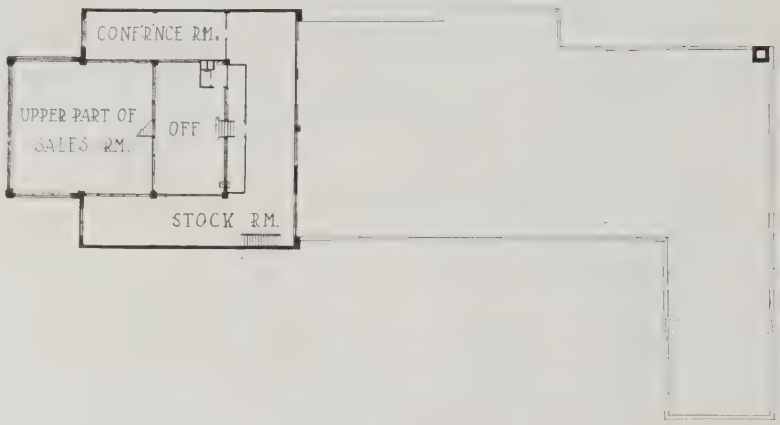
Photo, Margaret Craig



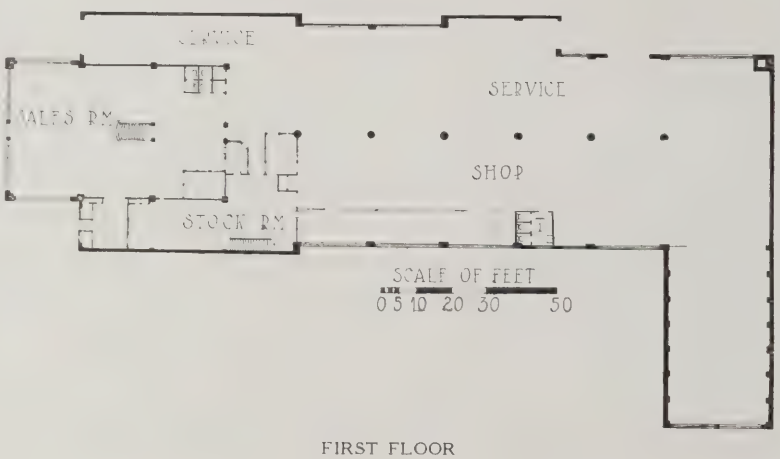
SHOW ROOM AND ACCESSORY SHOP, FORD MOTOR CO., PHILADELPHIA

PHILLIP S. TYRE, ARCHITECT

Plans on Back



SECOND FLOOR ROOF



FIRST FLOOR

PLANS, SHOW ROOM AND ACCESSORY SHOP, FORD MOTOR CO., PHILADELPHIA

PHILLIP S. TYRE, ARCHITECT

PACKARD SALES ROOM, WASHINGTON
GEORGE N. RAY, ARCHITECT

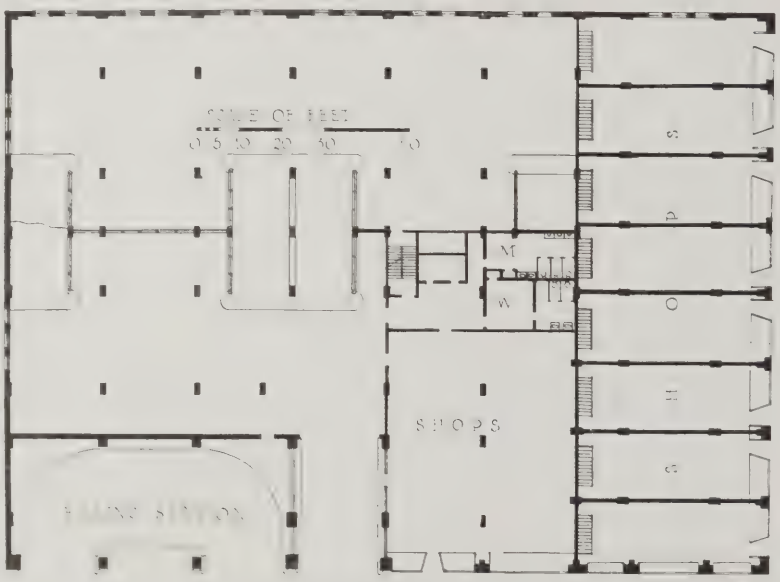
Photo, Commercial Photo Co.



Plans on Back

HOTEL STATLER GARAGE, BUFFALO

GEORGE B. POST & SONS, ARCHITECTS



FIRST FLOOR

PLANS, HOTEL STATLER GARAGE, BUFFALO

GEORGE B. POST & SONS, ARCHITECTS

The City Parking Garage

By ROBERT O. DERRICK

BECAUSE of the tremendously increased production of motor cars and because of the proportionate increase in their use for transportation purposes there has been, and will be, a continued and growing need for public parking garages in all large cities throughout the country. This may be more true in the case of the usual middle western city than in the east and other sections of the country, because of the lack in the middle west of other good means of transportation, such as elevated railways and subways. The surface transportation, consisting of trolleys, buses and jitneys, is entirely inadequate to handle the crowds, and distances are so great that, without the tremendous number of automobiles in daily use, these cities could hardly have grown to their present sizes.

Street parking is dangerous and a nuisance and only complicates the existing difficult problems confronting police departments, fire departments and traffic officials. Outdoor parking in the larger cities is being gradually discontinued as the number of available vacant lots decreases and as police departments more and more prohibit street parking. The public takes much better care of its cars than formerly, perhaps because they are now so well made that they last longer, and also because owners are taking more pride in their performance and appearance. They are also gradually realizing the bad effects of outdoor parking in "sand lots" or on the streets where their cars, although not in motion, are yet at the mercy of the elements as well as of reckless, inexperienced and unscrupulous drivers. Police departments in any city will coöperate to the fullest extent with garage owners and welcome every improvement in service, and in many instances they will prohibit street parking in the vicinity of the garages in order to keep the streets clear for moving traffic. It is quite obvious that with clear streets the difficulties of fire departments are considerably lessened, and for this reason the public garages are a great help to them, and they encourage their growth.

With all this in mind, several Detroit business men, headed largely by motor car manufacturers who are vitally interested in increasing rather than permitting the decrease in the use of their products in the downtown streets of the principal cities of the country, grouped themselves into a substantial organization to do two things, which seemed quite possible:



One of the New Buildings for The Detroit Garages, Inc.
Robert O. Derrick, Architect



Entrance, West Unit Garage



Up and Down Ramp, East Unit Garage

Views in Two Pittsburgh Garages; Robert O. Derrick, Architect

1. To build, as a laboratory experiment, three modern garages in the city of Detroit, to see whether by proper designing and proper management such garages could not be made almost immediately profitable in a large city.
2. To form, if the experiment proved successful, a larger corporation to operate garages in other cities of the country, following the same lines, general design and management.

The first company was The Detroit Garages, Inc. Toward the close of 1925, when the Detroit experimental garage had been built and in operation for a year and had proved its earning capacity and the correctness of its basic theory, a second corporation, The National Garages, Inc., with a capital of a half-million dollars was formed, including in its stockholders and directorate nationally known men, bankers, business men, and others of wide prominence.



Combination Garage and Sales Room, Stockton, Cal.



Detroit Garages, Inc. Filling Station
Robert O. Derrick, Architect



Exit, Baker Garage, Minneapolis
Larson & McLaren, Architects

Three years ago we were requested by The Detroit Garages, Inc., to take up the study of this problem, and, after a thorough investigation lasting over six months, with frequent visits to cities where large parking garages had been operating successfully, we designed the first unit, and four and one-half months later the structure was in operation. The building of other units followed almost immediately, not only in Detroit but in other large cities as well.

The National Garages, Inc. is associated in ownership or operation with these well conducted garages:

3 units in Detroit;
2 units in Pittsburgh;
2 units in Portland, Ore.;
1 unit in Syracuse, N. Y.;
1 unit in Huntington, West Va.,

and it is associated in the same way with subsidiary corporations which are building structures in Colum-



Clarke's Strand Garage, New Orleans
Favrot & Livaudais, Ltd., Architects



Bolling Jones Building, Atlanta
Lockwood Greene & Co., Inc., Engineers



Grand Circus Garage, Detroit
Smith, Hinchman & Grylls, Architects

bus, O., Memphis, and Birmingham, Ala., all of which structures we have designed on the same general plan, either directly or in association with local architects, a plan which often has much in its favor.

In our original investigation and from our experience gained by carefully watching the operation of each unit after completion, we obtained valuable information which should be closely followed in order to produce a profitable investment for owners. Of course the location is of extreme importance. For instance, as a general rule, a garage on a very important downtown street cannot operate successfully because of the value of the property, and also because of the heavy automobile traffic in the streets. The heaviest traffic periods in the garage and on the streets are between 12 and 2 o'clock, in the middle of the day when a great number of cars go out and others come in, and again about 5 o'clock in the afternoon, when the building must be practically emptied in a few minutes. Five or six hundred cars cannot be quickly taken in or out of a building when the street is already crowded. Consequently, an ideal location is that situated just on the edge of a busy section and on a corner if possible. This corner location will usually permit the pedestrian entrance, lobby, and offices on the more important of the two streets and nearer the center of activities, and the motor entrance and exit on the less important, quieter street. But by no means allow the motor entrance and exit to be located on a one-way street. The reasons for this are obvious. People do not object to driving their cars half a block or so farther to the garage, but when they walk to or from the garage it is important to have the pedestrian entrance as near as possible to the center of the section served by the garage. A corner location will also usually permit a gasolene station, which should be profitable and is always desirable. The cost per square foot must be kept at a minimum in order to produce a profitable investment, and only the cheapest methods of construction should be used, without decoration or use of ornament. This in itself is another reason why a location on an important street is not feasible. Being merely factory buildings, they look the part and would be considerably out of place in the immediate vicinity of monumental public buildings, office buildings and other important structures. There are many exceptions to this, and there is no doubt that these buildings are operating profitably, but they might be more profitable were it not for their more elaborate and costly elevations and interiors, made compulsory on account of their locations. The location itself might be too valuable and one where an office building would bring a far better return, as is the general rule on expensive property on an important downtown street in almost any large city.

The interiors of the garage proper, while of the greatest simplicity, must be bright and clean, with good ventilation and light. They must be inviting and present an appearance as different as possible from that of the old fashioned, dark and grimy garage. The lobby, however, should be attractively decorated, well furnished and of generous size, for it is here that the patrons wait for their cars to be brought down from the upper levels. The attendants are no longer in overalls, but in clean, neat chauffeurs' uniforms and are trained to give chauffeur service should it be required by garage patrons.

Unless the available ground area is very small and valuable, requiring great height to the building, ramps will usually be preferable. In the first place the cost per square foot of constructing a ramp is hardly more than the cost of a level floor. Then there are no repair, upkeep or operating expenses in connection with a ramp, and the patron pays with his own fuel the cost of moving his car in the garage. On the other hand the original installation cost of elevators is considerable, and the same is true of the maintenance and operating costs, with the company, instead of the patron, paying for the transportation of the car while in the building. Again, in a 10-story ramp garage, for instance, without crowding there can be 40 cars in motion in the aisles and on the ramps, while in an elevator garage the number of cars in motion is limited to the number of elevators. By increasing the number of ele-



Accessories and Garage Building, Detroit
Albert Kahn, Inc., Architects



Ramp Garage, Atlanta
Pringle & Smith, Architects

vators the car storage is proportionately decreased. The same is true to a greater extent in the elevator and conveyor type of building, where the cars are never driven under their own power, but are moved vertically by elevators, automatically placed on conveyors, and parked mechanically. The installation cost of such a system, as well as the operating and maintenance costs, would be prohibitive, although fewer employes are required, while a breakdown in the mechanical equipment would cause the most serious traffic delays in the garage. A patented ramp, which we have frequently used with great success, takes up no more room per floor than an elevator, leaving the same amount of space for car storage.

This ramp is only one of several, but this particular type will permit very easy grades by the use of mezzanines, so that the car travels up or down on the ramps only half a floor at a time, and this will permit the parking of all cars on level floors. The mezzanines as well as the regular floor levels contain aisles and parking spaces, with no room whatever wasted. The floor heights can be kept very low, thus tending to reduce the grades of the ramps and necessitating less building and less heating surface, which in turn reduces the original, operating and maintenance costs of the structure. Another kind of ramp is the double or single circular type, which works out advantageously in certain cases, due usually to the size or shape of the property. The continuous ramping of the floors is also excellent in many instances, as it will allow more storage spaces, with all cars parked on a sloping floor; the convertibility feature is far more difficult, and the expense of erecting this type of building is considerably more than one equipped with a ramp such as has just been mentioned. This type also requires property with a large street frontage, which often increases the amount of the original investment, at the same time reducing somewhat the possibilities of a high return. The grades of the floors in such buildings are extremely easy, however, sometimes as low as 5 per cent, depending on the size of the property. Using any type of ramp, however, the principle of low story heights is extremely important.

Except in the type of building just mentioned, where the entire floor area is ramped, it is extremely advisable to provide double ramps for about one-third to one-half the height of the building. We have also found that only enough boiler capacity and heating surface are required to produce a temperature of from 40 to 50°, and it is advisable to concentrate most of this heating surface on the lower floors. There should be clear vision ahead at all times, and all walls possible should be eliminated inside the building, especially on typical floors. We have found that the only walls necessary are those enclosing the passenger elevators and stairways, leaving the floors and ramps quite open except for the necessary beams and columns. This will tend to speed up traffic and greatly reduce the number of accidents, two considerations which are important.

It is advisable from the point of view of both operating and initial cost to completely fill in the concrete or steel frame of the exterior walls with glass where permissible, as it is cheaper and gives a far brighter and better lighted interior. Care should be taken with the artificial lighting to produce the best effect, and in some cases "Stop" and "Go" signal lights are necessary, controlled by an employe as traffic officer. Such a system will also help considerably in speeding up traffic in both directions and eliminating accidents, especially where single ramps only are used. Automatic door openers, operating from a trip in the sidewalk or near it as the cars come in and on the inside of the garage near the doors as they go out, are practical and valuable, but the same advantages can be had with push-buttons if desired. It takes the weight of a car to operate the trip, and it should be placed quite close to the doors, thus making it necessary for all cars to come to a full stop before entering or leaving the structure. Careful attention should be given to this.

If the building department will permit it, a basement will be found very useful for repairs as well as for storage. It must, however, have excellent ventilation and light. The aisles should be of gen-

erous width, to permit easy handling of cars. From the operating point of view columns should be spaced to allow only two cars in each bay. The bases of the columns are designed to guide the cars into the spaces close to the columns, thus allowing the maximum amount of room between the cars when parked. The use of three or more cars per bay increases the cost per square foot, strange as it may seem, and is awkward from an operating point of view, usually necessitating an additional expenditure for concrete curbs to act as guides when parking the cars. The two-car bay is almost always preferable.

The administration offices should be concentrated immediately adjacent to the lobby and should consist of the manager's office and general work space directly connected with the lobby, where one attendant can take care of the office work and the sale of accessories, cigars, cigarettes, magazines and papers which are displayed on one side of the room. The cashier's office should have a window opening into the lobby, where care checks can be received and payments made, and another opening into the garage proper, where the checks can be turned over to an attendant or chauffeur. A superintendent's office is also necessary, opening into the garage. A passenger elevator and stairway opening in the lobby and wash room facilities for men and women somewhere adjacent complete the requirements. An employes' wash room should be located elsewhere. The garage must furnish gasolene, oil, air and water service inside, and outside if possible, while a wash rack for cars in proportion to the capacity of the building is desirable and should be profitable. Ignition service and tire repairing should also be furnished, and the sale of accessories in the lobby is usually profitable and desirable for the management.

In the location of the ramps every effort must be made to place them as far as possible from the motor entrance and exit, thus leaving the maximum aisle space and car storage on the ground floor to be used as a clearing space during the rush hours. This is important, as cars cannot be taken to upper floors by attendants as fast as they come in. Those that cannot be taken up immediately must be stored out of the way until they can be moved, after the rush is over. Experience has proved that most people refuse to do more than drive their cars into the ground floor of the garage, where they leave them to be placed by employes, and the same is true when they leave. However, there are still some people who insist on driving their own cars, and there is a limit to the number of floors they will travel. Ten to 12 stories have proved to be about the maximum height for the practical operation of a ramp garage. A



Entrance to Republic Building Garage, Denver
G. Meredith Musick, Architect

higher building with elevators and conveyors appears to only increase the expense, difficulties and problems of operation, to say nothing of the amount of the original investment. During the normal traffic conditions a car can start under its own power on the first floor in the North Unit of The Detroit Garages, Inc., and arrive on the eighth floor in one minute without hurrying, which is better than most elevators can do. Use of these ramps is most successful.

A reinforced concrete structure is the cheapest to erect, but where cities are growing rapidly the owners often think it advisable to use steel construction so that should the property become too valuable to maintain a garage it can more easily be converted into an office or loft building. To procure the most profitable garage investment, however, the building should be designed and erected without regard for conversion possibilities, and it should be built its full height immediately, with no thought of later adding additional stories. It may have fewer floors and a smaller capacity as a result, but it will be more profitable as, in general, several small units properly located will be far more successful than one large building. This is one of many things to be considered.

All, excepting the larger of the middle-western cities, have the business, financial, hotel, theater and shopping districts concentrated in a reasonably small area, and a garage on the outskirts of this area will probably draw patrons from all these sources. In the larger cities these districts are often quite distinct and apart, and smaller units serving each district are far more advisable than erecting one or two large units and expecting them to draw from the more remote sections. Four to five blocks is the limit a person will walk to and from his garage, and it is surprising to find what a difference one block will make in the mind of the public. A garage may be operating successfully, but if another is erected one block nearer the center of activities the patrons of the old will move to the new, providing it is properly designed and operated. If there is not enough business for both, the old garage will disappear. In purchasing service the public is fickle.

Our experience in designing and erecting garage buildings in many different cities and in carefully watching their operation has proved that certain facts are invariably to be met. Night business in a garage is extremely desirable and valuable. In general, hotels and theaters are practically the only sources of night revenue other than from light trucks and delivery wagons. It would not be profitable to erect a garage to accommodate the small available heavy truck business because of the initial expense necessary to take care of the increased floor



Entrance to Baker Garage, Minneapolis
Larson & McLaren, Architects



Ten Story Ramp Garage Building
Robert O. Derrick, Architect

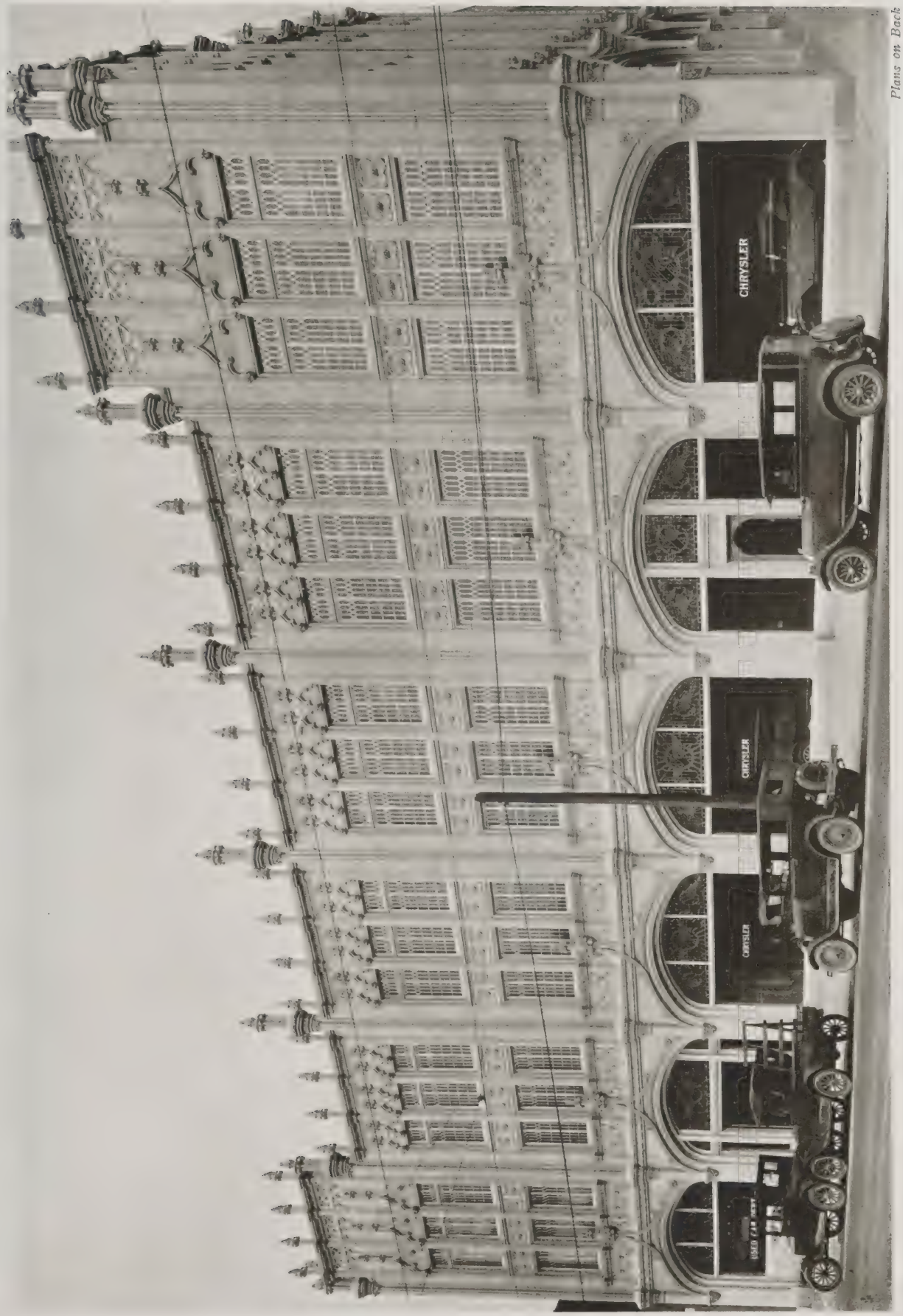


Automobile Parking Garage, Pittsburgh
Robert O. Derrick, Architect

loads, higher clearances, and wider car spaces. Moreover, the leasing of space for light trucks and delivery wagons presents difficulties enough without the added burden of the heavy truck business. Although their leases should stipulate that they should be out of the building before the rush hour in the morning and should not return until the close of the rush hour in the evening, such regulations will not, and in many instances, cannot be enforced. Consequently, they will seriously interfere with the regular traffic, especially during these rush hours, thereby reducing the efficiency of the building and tending to defeat its original purpose, and seriously impairing the main income-producing business of the garage. Both The Detroit Garages, Inc., and The National Garages, Inc., have been compelled in several instances to discontinue accepting this class of trade, in order to properly take care of the business for which their garages were originally intended.

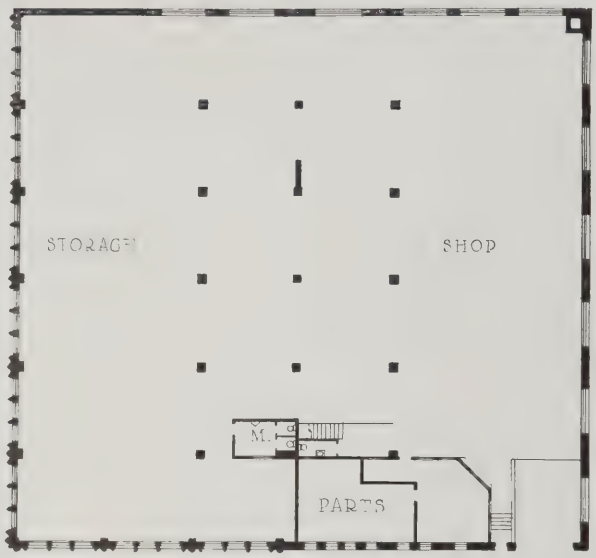
The financial and business section is an excellent area to draw from, although there is little night business available. The patrons are mostly quite responsible and realize the value of their leases, being careful not to let them lapse; and little effort is required to sell garage space in a congested financial and business center. As a rule hotels produce only a moderate amount of business during the day or night, while theaters produce considerable patronage during the day and more at night, when they prove to be very profitable. The shopping district is perhaps the best, and where it is combined with the theater district a garage properly located to serve such an area will nearly approach the ideal,—that of operating on a 24-hour basis. An enormous amount of work must be accomplished to educate people to use a parking garage if they are not familiar with their operation and if their city has not supported one or more before. Extensive advertising is necessary, and salesmen must be employed to sell monthly and yearly leases. These will occasionally be canceled, and in the end all will run out and many will not renew for one reason or another. In general this selling of leases must be continuous, and the space should be leased up to 100 per cent or over. If this can be accomplished the building will about carry itself with little or no net profit. The net profit is derived from transients and the selling of different kinds of service and accessories All the regular tenants on lease will never have their cars in the garage at one time. Consequently, all the transients can be taken care of except in extreme cases, or where the location is of unusual excellence. It is well to remember, again, that a small building always well filled with little or no effort is far more profitable than a large building not completely filled and requiring effort to keep it 100 per cent occupied. This is one detail of management.

The garage problem is continually increasing in importance, improvements are made repeatedly, and a great many details and features too numerous to mention in these pages are only learned by experience. The problem, while at first glance it may appear to be extremely simple, like all others, proves in the end to be one with the usual difficulties and complications, requiring intensive study to arrive at the proper solution, and offering an unusual amount of interesting work for the architect,—a condition which demands the best an architect has to give.

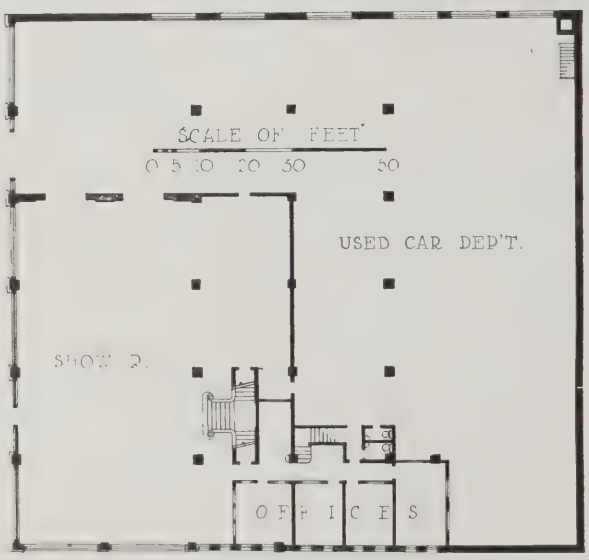


Plans on Back

BROADWAY ELEVATION, F. C. CULLEN GARAGE, DENVER
J. B. BENEDICT, ARCHITECT



SECOND FLOOR



FIRST FLOOR

PLANS, F. C. CULLEN GARAGE, DENVER

J. B. BENEDICT, ARCHITECT



CHRYSLER SALES ROOM, PASADENA
JOHN N. COOPER, ARCHITECT

Photo. Margaret Craig



PIERCE ARROW SALES AND SERVICE BUILDING, HOLLYWOOD, CAL.
C. R. SPINK, ARCHITECT

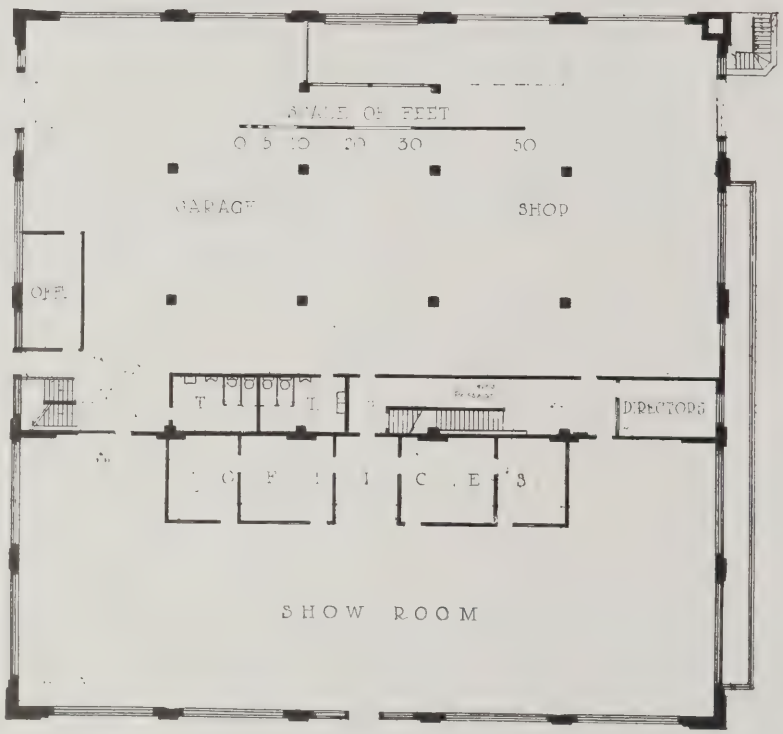
Photo. Margaret Craig



Plans on Back

GARAGE AND SALES BUILDING, BUICK MOTOR CO., DENVER

MOUNTJOY & FREWEN, ARCHITECTS



PLANS, GARAGE AND SALES BUILDING, BUICK MOTOR CO., DENVER

MOUNTJOY & FREWEN, ARCHITECTS



STUDEBAKER SALES BUILDING, PASADENA
FREDERICK KENNEDY, ARCHITECT

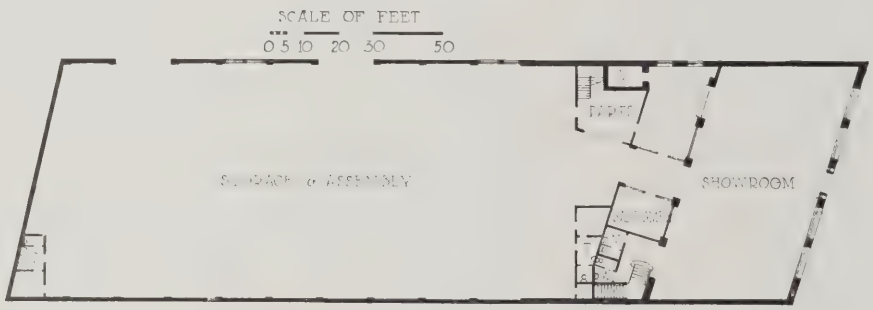
Photo, Margaret Craig



Photo, The Mott Studios *Plans on Back*

SALES AND SERVICE BUILDING, GOTFRED SON TRUCK CORPORATION, LOS ANGELES

MORGAN, WALLS & CLEMENTS, ARCHITECTS



FIRST FLOOR

PLANS, SALES AND SERVICE BUILDING, GOTFREDSON TRUCK CORPORATION, LOS ANGELES

MORGAN, WALLS & CLEMENTS, ARCHITECTS



LINCOLN AUTOMOBILE AGENCY BUILDING, DENVER
MOUNTJOY & FREWEN, ARCHITECTS

Photo. Theodore M. Fisher



NASH MOTOR CAR CO., SHOW ROOM, HAVANA
CESAR E. GUERRA, ARCHITECT

Heating and Ventilating of Garages

By WALTER TUSCH
Of the Firm of Tenney & Ohmes

THE steadily growing use of the automobile for both pleasure and business purposes, with the attendant need for urban storage space with service facilities, is creating a demand for garages, for both transient and regular patrons in neighborhoods immediately adjacent to the centers of the greatest business and social activity.

Speaking as a heating and ventilating engineer, I approve the idea of underground, multi-storied, and inside plot garages, as they open up new fields for engineers' services; and I am pleased to note that the newspapers and other publications are calling attention to the dangers of unventilated garages. The owner or operator of a public garage is thoroughly conversant with the hazards attendant upon the presence of gasolene fumes and the unconsumed products of combustion of gasolene, and will insist upon proper provision being made for their removal.

The proper heating and adequate ventilation of the average private garage does not usually present any great difficulties. It is desirable, and mandatory in many localities, to avoid use of a heating device employing an open flame, so that the best practice dictates that steam or hot water pipes be brought from the central plant in the residence or some other building, or that the boiler be installed in a separate compartment in the garage without openings communicating with the car space. Steam, vapor, and hot water heat are equally suitable, although greater care must be exercised with the latter to avoid freezing of radiators and piping by the inadvertant leaving open of windows or doors in very cold weather. The greatest economy in heating a small garage would be secured by locating the heat radiator as near the radiator or hood of the car as practicable, as this is where the heat is most needed. As a usual thing, an owner will be satisfied if he has the assurance that the temperature is maintained at not more than 50°, which will represent a material saving in his fuel bill. The ventilation of the small garage can usually be sufficiently obtained by gravity vents through the roof or side walls, windows or the door. These should naturally all be kept closed when the car is out or is in dead storage, for the sake of economy in heating, but should be opened to their limit when dispensing gas or experimenting with the motor. The larger and more elaborate private garage might possibly be provided with an exhaust fan to be run only at such times as required to remove smoke and fumes, although if I ever own a large and elaborate garage I should prefer to let the motor smoke outside. In other words, prevention is better than cure, and common sense should dictate to the owner such action as will preclude the possibility of there being disastrous results or a fatality, due to the architect's not having designed a garage fool-proof in the way of ventilation.

The main object of this article is to mention some factors deserving serious consideration in the design of the larger public garage in reference to the provisions advisable to be made for the heating and ventilating apparatus. The public garage in this climate must be heated, both for the protection of cars and the comfort of patrons. Sometimes the more simple the problem may appear to the layman the more difficult it is in reality. The one almost insurmountable difficulty is to overcome the chilling effect produced by the opening of doors for the entrance and exit of cars. The best device for the purpose is probably a power-operated door, of the "jack-knife" type, hinged at the top and provided with a horizontal joint in its center, so that when the door is fully open the two parts rest at the ceiling practically in two parallel horizontal planes. In any event the larger part of the heating equipment should be concentrated as near the doors as possible. This leads to a second difficulty, which is to provide proper space for the heat radiation where it is most required. The radiators or coils should be located as near the floor as possible and yet sufficiently high to avoid being damaged by the impact of cars, and locations must be selected which will not sacrifice valuable floor area. Column centers are usually selected to give maximum car space with minimum clearances, and little space can be spared for radiators. Ceiling heights are also worked out for minimum headroom, so that even overhead unit heaters entail a loss of valuable floor area. All rising lines of the piping system should also be located so as to be safe from possible car impact.

The heating designer must also bear in mind that a building without interior partitions and entirely undivided, as is the case in the garage, requires a greater expenditure of heat to produce satisfaction, especially on windy days. The reason for this is that cold air entering through leaky window construction, often found in garages, has a clear and unimpeded sweep across the entire floor to the leeward side of the building, where the warmer air is forced out through all openings. So it is a good investment to provide for calking airtight both inside and outside between window casings and masonry.

The multi-storied garage brings to the fore in an aggravated way another factor, which cannot be overlooked,—that is "updraft." In every heated building the tendency of the warm interior air is to rise and escape through crevices, open windows or vents on the upper floors, to be replaced by cold exterior air entering through opened doors, crevices or windows in the lower stories. The taller the building and the more open its interior arrangement, the more marked is this effect. Thus a multi-storied garage, with its open floors and the usual ramps connecting its various levels, offers less resistance to this effect than practically any other kind of building. Add to this the frequent opening of doors for the entrance

and exit of cars and a careless or too liberal opening of windows and ventilating outlets on the upper floors, and the garage may become a veritable cave of the winds in its lower stories, and at the same time be greatly over-supplied with heating surface on the upper floors. In general the heating apparatus should be designed for 55° temperature in zero weather, but very liberal allowances must be made for the main doors, and for ventilation, as hereafter mentioned. A large amount of heat is both radiated from entering cars and discharged from their exhausts, but this is such a variable quantity as to be undependable. All departments other than space used distinctly for car storage, such as waiting and supply rooms, toilets, and store rooms included in the building, should be served by separate mains for purposes of economy, as they will require heat at times when it is not needed in the garage proper. Such rooms should of course be heated to 70°.

Generally speaking, steam is to be preferred as a heating medium, although hot water has certain advantages if freezing pipes and heating surfaces in exposed places are carefully guarded against. If steam can be secured from a steam service corporation at attractive rates, and if a timing control device is installed to automatically shut off the steam in accordance with the hour and the weather, it may be far cheaper to purchase all steam required. The necessity of banking fires, and starting them up again as required by a change of weather is one of the disadvantages of the private boiler plant, which cannot as economically take care of fluctuations of load as can a corporation selling steam for both heating and power. The designing engineer should carefully and conscientiously analyze the relative costs of purchasing, versus generating steam, taking into account charges for cost of construction, of space for the plant, cost of plant, maintenance and depreciation, taxes and insurance, extra labor, cost of coal, and ash removal, and be guided by the result.

The limitations of this article preclude a discussion of the theoretical requirements for ventilation, and it is doubtful if they could be successfully applied to a problem of this sort. So many factors enter that no workable formula is possible. As many windows as possible are installed, as a usual thing, which even when closed, through leakage, afford a means for the ingress of a considerable amount of fresh air. When fresh air is most required, that is when many cars are in motion and discharging the maximum amount of exhaust, the entrances and exit doors are also most open and are providing an excess of fresh air. Bearing in mind that traffic, which is the measure of ventilation requirement, is not occurring in all parts of the building at the same time, it is advisable to be very liberal with the areas of the flues and exhaust outlets, but to keep the capacity of the fan or fans at less than the flue capacity. An attendant is usually stationed on each floor, so that with good management, transient cars arriving are parked on certain floors or in certain areas. The attendant should open the exhaust outlets during such times, keeping them closed when traffic is light. The through traffic on the ramps will not noticeably affect an idle floor, as the updraught will carry all exhaust gases to the upper floors, where the cars are being berthed, and where the exhaust outlets should be fully open. This arrangement of design effects the maximum economy of installation and operation, but the attendants must be trained to coöperate or failure will be the result.

Without intending to define a standard, because the requirements of every building will vary with its type, a few figures for a successful installation might be given as an example. Suppose the building is of five stories, exposed on all sides, on a plot 130 by 180 feet. It is provided with a fan capable of exhausting 60,000 cubic feet per minute. With various toilets and shops, rather intensively ventilated, this allows about 10,000 cubic feet per floor of car storage, or two and one-half changes per hour. With half of the outlets closed this could be increased to practically five changes per hour, or once in 12 minutes for any selected floor. This active air change, of course, materially increases window leakage and chilling effect. In this building about 3,000 square feet of additional radiating surface was installed to take care of this loss of heat, although this additional surface will actually heat only about 12,500 cubic feet of air from 0 to 65°. The location of the vent openings will necessarily be largely determined by the general arrangement of the floor plan. It will usually be impossible to run any horizontal ducts at the ceilings to secure the refinement of an even distribution of the exhaust, and the outlets will usually be located directly in the walls of the vent shaft or shafts leading immediately to the exhaust apparatus located in the roof house. It is evidently advisable to locate the exhaust in the center of the floor plan, if the building has window exposure on all sides, or as remote from the windows as possible where window exposure is lacking on one or more walls. For evident reasons also the exhaust should not be located too near the ramps, where the air is in most active circulation, but rather so as to remove the air at the point of greatest stagnation. Exhaust would also be desirable at gasolene-dispensing points throughout the garage.

While this brief article is not intended to be, nor can it be, used as a manual of instruction for the complete design of heating and ventilating apparatus, I have attempted to dwell briefly on the most important factors to be considered. The proper ventilation of a garage has a great deal to do with the comfort and convenience with which it can be used, while the matter of heating is, if possible, of even more importance, since it affects the maintenance of property which is sometimes of far greater value than the garage itself. Planning the ventilating and heating apparatus for such a building should receive careful study by the architect responsible for its erection if its purpose and function are to be well served.

The Mechanical Equipment of the Garage

By RALPH HARRINGTON DOANE

MUNICIPAL traffic regulations and the ever-increasing influx of automobiles into congested districts have necessitated the erection in the principal cities throughout the country of large public garages which have presented for solution some very difficult architectural and mechanical problems new to the building industry.



Exit Ramps, Bowdoin Square Garage, Boston
Ralph H. Doane, Architect

Forming a basis for the present study are two new modern storage garage buildings, — the Bowdoin Square Garage, Cambridge Street, Boston, having an area of 27,000 square feet per floor, seven stories in height, with a capacity of 850 cars in parking stalls, and the New Motor Mart Garage, Park Square, Boston, having a floor area of 52,500 square feet per floor, eight stories and basement in height, with accommodations for parking 2,000 cars at one time. Each building embodies many practical special mechanical installations, none of which is absolutely standardized garage equipment, since the designs vary considerably with the layout of buildings, as to the location of parking areas, traffic aisles, service stations, and particularly the automobile entrances and exits. Each building presents its problem.

Throughout the eight floors and basement of the New Motor Mart Garage, said to be the largest garage in the world, there are 18 gasolene service stations, 27 oil distributing stations dispensing three grades of motor oils, and 44 stations where air for tire inflating and water for car radiators may be obtained. The gasolene equipment is a so-called hydraulic system, based principally on the specific gravity of gasolene and water in which water displaces each gallon of gasolene withdrawn from the two 2,500-gallon storage tanks located beneath the basement floor. Within each tank is a patented unit consisting of two seamless copper floats mechanically designed to by-pass water to the sewer in the event that all the gasolene is withdrawn, thereby eliminating the possibilities of floating water through the panels at the distributing stations. Also connected with the storage tanks is a 2-inch water riser, which terminates at the seventh floor, 94 feet above, where two water tanks of 15-gallon capacity are located, supplying sufficient buoyancy to float gasolene to the eighth floor distributing panel. All panels are equipped with nozzle-control dispensing hose, remote electric control operating a solenoid switch in basement, which regulates the supply of water to storage tanks, and cut-out valves to stop the flow of gasolene in the event of the hose becoming severed. The oil delivery system of the New Motor Mart Garage, however, differs entirely in design from that of the gasolene system, although there are distributing stations on all floors supplied by three storage tanks which are located under the basement floor slab. These tanks have a total capacity of 1,750 gallons, two of them being of 500-gallon capacity for light and heavy oils, the other holding 750 gallons for medium oil. In conjunction with each storage tank there is a working tank of 40-gallon capacity supplied by gravity from the storage tank. The working tanks are under a varying air pressure, as desired, with a maximum of 180 pounds, sufficient to discharge oil to the highest point of the system approximately 100 feet above the storage tanks, and they are so piped and fitted with horizontal and vertical check valves as to eliminate any pressure upon the storage tanks, the supply of air also being dried and filtered so as to avoid condensation from compressed air being mixed with the oil and emulsifying it. At each distributing station there are three reservoirs, each of 65-gallon capacity, equipped with self-closing pressure supply bibbs and sealed handpumps for the measuring of oils. These reservoirs are filled each day from the storage tanks, and tabulation is made of the contents, the attendant being charged with the amount of oil dispensed, an accurate check being kept.

The car-washing facilities in the New Motor Mart Garage are unique in design, and so efficiently equipped for cleaning and washing in progressive stages that they probably represent the most advanced ideas in car-washing equipment. Fifteen cars can be accommodated simultaneously in the various stages of washing, each car being completed in 20 minutes' time for the entire process. Motors are thoroughly cleansed with kerosene spray under 180-pound pressure, upholstery dry cleaned, and the whole interior of the car vacuum cleaned. The body and running gear are washed with a warm soapy spray of varying pressure of from 90 to 300 pounds, and then rinsed with clear cold water at 90-pound pressure, chamoised, and dried with air blowers and jets of 180-pound pressure, removing all moisture from crevices and edges of glass win-



Ramp to Second Floor, Packard Garage, Philadelphia
Phillip S. Tyre, Architect

dows, windshields, doors, etc. Throughout the 150-foot length of the washing and cleaning department are two 3-inch depressions in the floor, forming a track of sufficient width to accommodate the largest vehicle, which guides the car passing through the various stages of operations and eliminates the necessity of using the steering wheel and also the opening of the doors after the interior of the car has been cleaned. Suspended from the ceiling, parallel to and at both sides of the floor guide rails, are trolley tracks containing roller-bearing trucks to which the various lines of hose are connected, eliminating the necessity of swinging a hose around a car, particularly a limousine, in order to wash both sides. The slightest tension on a hose causes it to travel along the trolley track. This device minimizes the danger of damaging cars with the hose, and it also facilitates the frequent handling of the hose.

Four compressing machines, each operated by a 5 h. p, direct-current motor, equipped with rheostats and square "D" switches, constitute the equipment for high-pressure water washing. Each machine is a unit in itself, the enclosed motor, belts, pulleys, pump cylinders, electrical controls, pressure gauges, by-pass piping and suction hose being mounted on a single base and so protected that all electrical connections are impervious to water and immune to the possibilities of short circuiting. The capacity of each pump is in excess of 18 gallons per minute at a maximum pressure of safety in the amount of 300 pounds, and the pumps are so constructed as to be practically fool-proof by the system of by-pass piping and pressure relief, should the motor be allowed, by neglect, to run continually when the hose nozzles are not in use. Each pump produces sufficient pressure and volume of water to supply four spray guns or nozzles, so constructed with diaphragms that by a quarter-turn of the hand wheel the discharge can be changed from a driving stream to a fine, light mist. The guns are small in size and can readily be placed under the mud fenders without coming in contact with a tire, thereby enabling the car washer to work in confined places, using the pressure to its full advantage. Also connected to the overhead track and in conjunction with the high-pressure washing apparatus at each of the eight wet stands are two independent hose lines of 90-pound pressure, hot, cold or tempered water being supplied directly from the domestic service. The domestic water service serves the purpose of showering or dowsing a car, before it is washed by high pressure, and also for the rinsing which completes the operation on the wet stands. Two-inch cold water, 2-inch hot water, and 1-inch hot water circulation returns, all brass, constitute the water supplies to the washing department, the hot water being supplied from a 2,200-gallon generator containing a steam heating element of sufficient capacity to heat contents of the tank once an hour to a temperature of 190° Fahr. Mixing chambers and automatic non-scalding temperature control valves are installed to temper water for either machine or domestic use. To avoid vibration due to varying changes in pressure, check valves have been incorporated in the piping. The dry stands of the washing department are equipped with portable vacuum cleaning machines which are fitted with at least 12 different types of instruments for vacuum cleaning. The hose from these machines are connected to the overhead trolley track in the same manner as in case of the washing machine equipment.

Garage management and the mechanical layout are inextricably inter-related. Speed in receiving



Service Room and Parking Area, Packard Garage, Philadelphia
Phillip S. Tyre, Architect

and clearing cars and customers is essential to the success of the enterprise. In both the Bowdoin Square Garage and the New Motor Mart Garage, the control of traffic by traffic squads has been augmented by the installation of pneumatic tube receiving and dispatching systems as well as telautograph service, call bell signals, telephones, time clocks, time stamps, and a modified block signal system of annunciators. Due to the installation of duplex ramps in the New Motor Mart, with exits and entrances on two different streets, the block signal system is designed accordingly with controls on each of the seven typical floors at the extreme ends of the ramps. The floor areas are divided into two sections for parking purposes, and at each car entrance on the first floor are grouped two annunciators connecting all floors and notifying the car dispatcher of parking conditions on each floor. The annunciators are also grouped at the ramp extremes on the second floor, which is customarily the car dispatcher's station during active periods, thereby eliminating the stopping of cars at the auto entrances at street levels. Each floor captain notifies the dispatcher of the parking conditions in his particular section by throwing a switch which lights one of the three vari-colored lights in the annunciator cabinet indicating the number of vacant parking spaces. The dispatcher, in turn, notifies the parking captain of the number of inbound cars by throwing a switch which first sounds a gong and then turns on a light which remains lighted until a specified number of cars have been directed to the parking areas as indicated by the annunciators. This of course prevents congestion.

Floor draining in garages is a problem seldom planned for in a manner satisfactory to all garage operators and managers, as they differ greatly in their opinions as to the correct locations and types of floor drains. The various types of floor construction have a direct bearing on the problem. Where concrete floors are poured monolithically, it is necessary that the drains shall be in closer proximity to each other than is necessary when a granolithic finish is added to a precast base, since it is nearly impossible to grade monolithic finish properly, due, in part, to the usual sloppy mixture of the concrete and also to the necessity of there being a great number of men, using varying pressures upon their trowels, employed to complete the operation of surfacing large areas before the setting of the concrete takes place; it is seldom possible to eliminate depressions, regardless of the fact that screeds are used. Securing absolute evenness is most difficult.

The two garages mentioned here embody two distinct methods of floor draining, with similar equipment, and it is a question which is the more advantageous. In one instance, floor drains, approximately 40 feet on centers, allowing the maximum grade of 2 inches to occur in a radius of 20 feet, are located in the traffic aisles, while in the other the drains are located at the rears of the parked cars and approximately at the same dimensions on centers. The former system involves the objection that it is nearly impossible to keep the aisles perfectly dry, as traffic is continually moving over them, but this method does permit the use of squeegees,—while the other method does not permit accessibility for cleaning, but does keep the aisles dryer. Floor drains should contain hinged, non-removable dirt receivers and be equipped with back-water valves, so installed as to close when receivers are in an uplifted position, thereby shutting off the flow of water and mud deposited on the floor from uplifted re-



Up and Down Ramps with Roller Doors
Bowdoin Square Garage, Boston



Up and Down Ramps with Doors Rolled Up
Ralph H. Doane, Architect

ceivers. When dirt is shoveled from the floor, the receiver is replaced within the floor drain and the backwater valve opens, permitting uninterrupted flow.

All floor drain piping is oversized by design, as accumulating grease, oil, mud, etc. which form corrugated mounds within them, in time resulting in masses which it is impossible to move by the method of flushing or rodding. Eight-inch soil pipe is used wherever possible, into which running cleanouts are introduced as nearly at 20 feet on centers as possible. A 4-inch soil is extended 6 feet beyond the actual floor drain location, turned up and finished flush with the floor grade, with an inverted cleanout calked into the hub. The reason for this extension is to locate the cleanout outside the possible area of a water pool which will form if the floor drain is neglected to the extent of permitting the dirt receiver to become filled and also defeat the purpose of draining the floor through the cleanout and past the trap. All floor drains located more than 12 feet from main stacks are vented with 4-inch wrought iron vents tied into the main 8-inch vent, which is a continuation of the horizontal soil drains and is carried to the roof undiminished in size. The drains are piped to sand and gasolene traps which are also vented to the roof by means of two individual 4-inch vents. Sand and gasolene traps are often required by city ordinance, and usually descriptive designs and specifications are issued. However, it is seldom that the designs are for traps of sufficient capacity to be installed in garages similar to those being considered here. In both the Bowdoin Square Garage and the New Motor Mart Garage the sand and gasolene traps have been designed so that it is necessary to clean them not more than once every 10 or 12 months. The largest of three such traps installed in the New Motor Mart Garage has a capacity of 10,000 gallons and is constructed of waterproofed reinforced concrete. It is composed of two chambers,—the receiving chamber, and the delivery or cleanout chamber, which are separated by an 8-inch concrete partition, arched at the bottom and permitting a flow from one chamber to the other. The receiving chamber is a sealed compartment, except for the vent to the roof which carries off all gasolene and oil fumes, and it is accessible only through an airtight hatch cover. The inlet to this compartment is located approximately 2 feet above the sewer outlet from the delivery chamber and, therefore, is always above the water level of the



Evening News Garage, Detroit, Showing Up and Down Ramps
Albert Kahn, Inc., Architects



Portion of Typical Floor Parking Area, Motor Mart Garage, Boston
Ralph H. Doane, Architect



Up and Down Ramp Arrangement
Albert Kahn, Inc., Architects



Ramp Garage, Atlanta
Pringle & Smith, Architects

trap. The exhaust chamber is equipped with 6-inch I-beams so installed as to form a support for a wood plank platform inserted for use in cleaning out the trap. Eyebolts are located in the ceiling for use of blocks and tackle, and swinging iron doors, airtight when closed, are installed on the side of trap above the water line. This arrangement proves to be excellent.

The workshop of a modern garage forms an important part of the establishment, particularly when every kind of service is rendered, even to the painting of cars as well as reconditioning and rebuilding of bodies, motors, upholstering, and the repairing of radiators and mechanical parts. Such services necessarily require specially designed apparatus and installations. Quantities of compressed air are used in the workshop as well as in other portions of the building, as all oiling, greasing, and cleaning of parts are done under pressure. The air-compressing equipment comprises the installation of two 15 h. p. motor-driven compressors of 42 cubic feet per minute capacity for each pump, equipped with safety valves set to blow at the maximum required pressure of 225 pounds. In conjunction with the compressors there are two tanks or reservoirs, each being 3 feet in diameter and 10 feet in length, manifolded so as to work together. The motors are equipped with self-starting rheostats, operated by a mechanism connected to the air lines, thereby keeping the reservoirs completely filled with air at maximum pressure. The air delivery system is also equipped with auxiliary reservoirs located near equipment demanding quantities of air for operation, such as the air outlets in the car-washing department, previously described, and the pneumatic sewage ejectors. It also provides the means of operating other details of equipment, such as oil delivery system, tire-inflating stations, greasing and oil-lubricating system, and four "rotary lifts," for which air is also required.

The "rotary lifts" are of special design and will raise the heaviest passenger car 5 feet above the normal floor, on an open base constructed of structural channel irons and so designed as to rotate when in an elevated position. Pressure of 180 pounds is sufficient to operate these lifts, as they are worked on a semi-hydraulic principle, the plunger cylinder being full of oil which becomes compressed with the admission of the air, causing the piston to elevate. By expelling the air rapidly through a gate valve, the lift will gradually return to its normal position, but an arrangement is also provided whereby the



Workshop in a Garage in Los Angeles



Service Department, Garage in Denver



Wall Benches, Chevrolet Workshop, Detroit
Albert Kahn, Inc., Architects



Another View in Chevrolet Workshop, Detroit
Albert Kahn, Inc., Architects

oil within the cylinder can be delivered in very small quantities, through a small orifice in a nozzle attached to a quarter-inch hose 12 feet in length. The use of the hose decreases the pressure within the cylinder very gradually, permitting the use of the oil for lubricating and spring oiling, and retards greatly the downward course of the car. The lifts are set within circular pits 12 feet in diameter, with wells in the centers to accommodate the plungers, these pits concealing and providing space for the superstructures of the lifts when level with the floors. All air controls are installed 4 feet above the floor, next to a side wall, and so isolated as to be protected from damage by moving cars or by cars being rotated on the lifts. The controls consist of simple hand-operated gate valves. Grouped about each "rotary lift" are four grease gun outlets supplied by an air-operated plunger in a reservoir of 80 pounds of grease. The piping for this installation is 1¼ inches in diameter, each outlet being fed through a half-inch armored cable 12 feet in length and equipped with a patented grease gun. Also within the workshop is an adequately equipped battery room with charging apparatus; acid-proof sink and drain connected independently to the city sewer; tire-changing apparatus; small overhead portable lifting cranes; and a novel arrangement of portable lights.

Located in the boiler room, in lieu of an incinerator, which in Boston is not permitted within the garage, is a rubbish bin 10 feet by 14 feet and 22 feet in height, protected against spontaneous combustion by the installation of sprinkler heads. The rubbish bin is connected to all eight floors of the garage by a ⅜-inch steel plate flue or chute, 26 inches in diameter. At each floor there is an opening into this chute, so designed that rubbish can be dumped into it, or floor sweepings swept into it when the single door is opened. All rubbish is burned in the boilers.

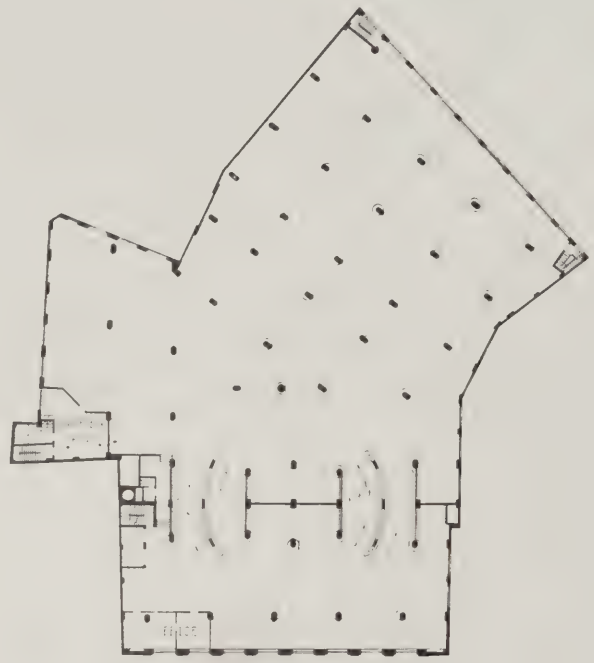
Other details of special garage equipment of interest installed in these buildings are the automobile entrance and exit doors and the electrical signal device warning pedestrians of the approach of outgoing cars. There are two types of doors used,—the horizontal sliding type and the vertical lift type. The vertical lifting doors are made in two parts of approximately the same dimensions, totaling 4,000 pounds in weight. They are electrically operated by 3 h.p. motors so geared that the lower sections raise and lower at exactly double the speed of the upper portions of the doors, and are controlled by push-buttons. The push-buttons are so arranged that only a touch contact is necessary for the uplifting operation, while for the closing of the doors it is necessary for the doorman to hold the contact throughout the length of the downward course, thereby requiring the operator's attention to be directed toward the moving door and reducing the possibilities of accident. The door control system is also provided with a safety stop switch connected directly to the emergency brakes installed in the operating equipment. The doors, already described, rise to a full height of 14 feet in five and one-half seconds, and each exit and entrance door is 22 feet in length, making door openings for both incoming and outgoing cars 14 by 22 feet, there being four such doors in the New Motor Mart Garage. The sliding doors operate in a similar manner, other than that they slide horizontally, and the equipment is nearly identical. Recessed in the floor approximately 20 feet to the rear of the exit doors is an electrical signal device so designed as to sound a gong attached to the exterior of the building, near to the doors, warning pedestrians of the approach of a car. It consists of a so-called floating metal plate 25 feet in length and 8 inches wide, supported by coil springs within which are the electrical contacts. This plate is so located that all four wheels of a car, approaching and passing over it from any angle, will cause the gong to sound, giving notice of a car's approach.

Mechanical installations, necessary in all modern garages as well as other buildings, and incorporated into the design of the buildings mentioned here, include fire alarm signal system; watchman's clock system; heating and ventilating system with use of heating units eliminating radiators; passenger elevators; parcel rooms and parcel room lifts; telephones; sprinklers; first-aid risers; standpipes; rolling steel shutters; ash hoists; and coal conveyors.

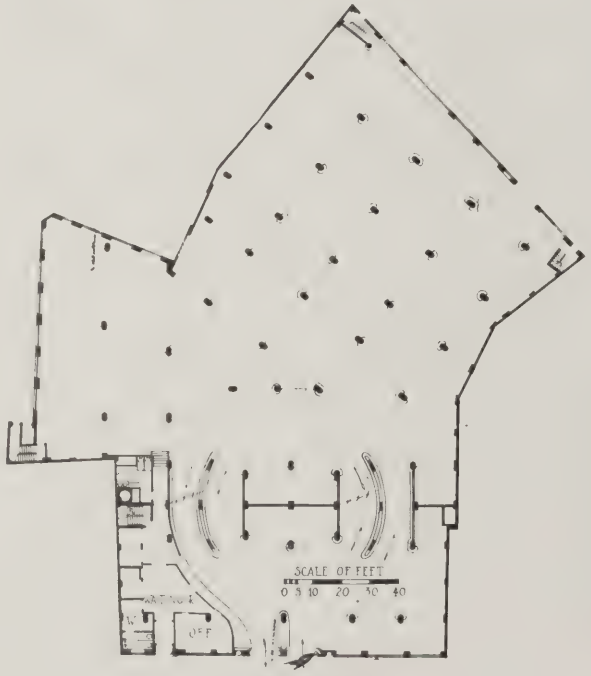
Plans on Back

BOWDOIN SQUARE GARAGE, BOSTON
RALPH HARRINGTON DOANE, ARCHITECT

Photo, Paul J. Weber



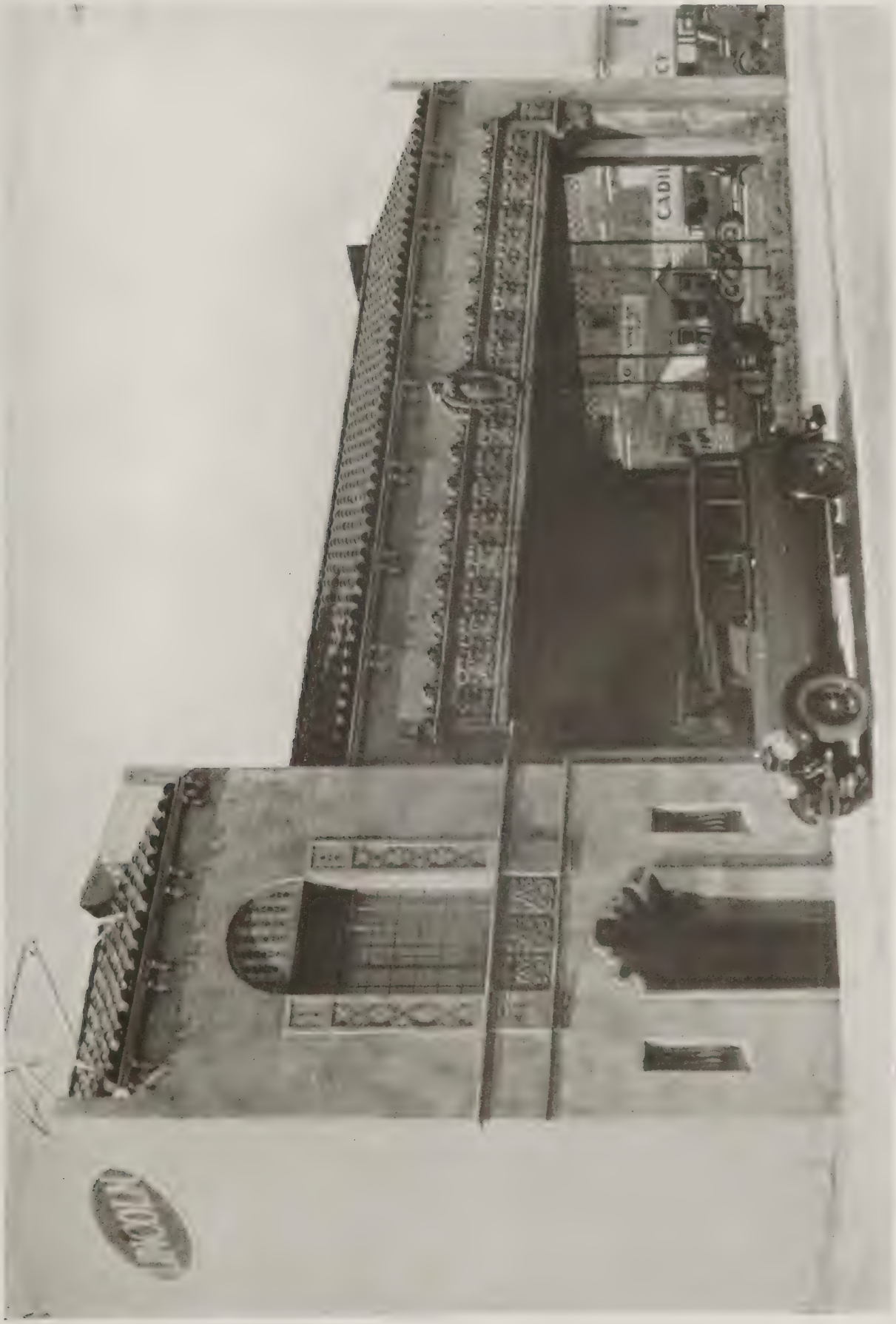
SECOND AND THIRD FLOORS



FIRST FLOOR

PLANS, BOWDOIN SQUARE GARAGE, BOSTON

RALPH HARRINGTON DOANE, ARCHITECT



LINCOLN SALES AND SERVICE BUILDING, HOLLYWOOD, CAL.
HARRY L. PIERCE, ARCHITECT

Photo, Margaret Craig

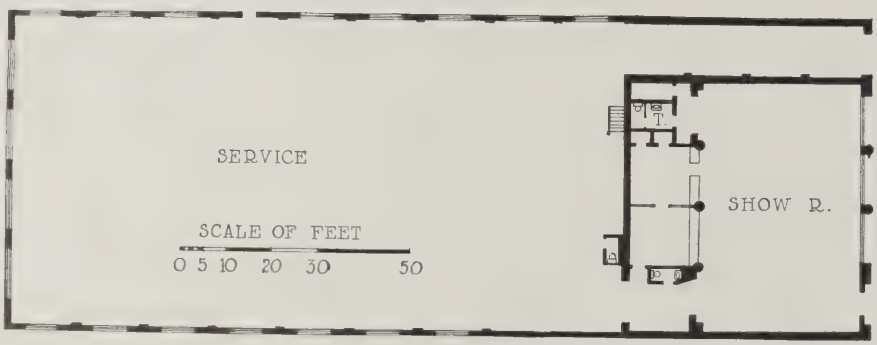


Photo. The Mott Studios

Plans on Back

STAR MOTOR CAR CO. SALES BUILDING AND GARAGE, HOLLYWOOD, CAL.

MORGAN, WALLS & CLEMENTS, ARCHITECTS



FIRST FLOOR

PLANS, STAR MOTOR CAR CO. SALES BUILDING AND GARAGE, HOLLYWOOD, CAL.

MORGAN, WALLS & CLEMENTS, ARCHITECTS



Photos. Margaret Craig

AUTOMOBILE SALES BUILDING, SAN FRANCISCO

MARSTON, VAN PELT & MAYBURY, ARCHITECTS



STUTZ SALES AND SERVICE BUILDING, HOLLYWOOD, CAL.
H. F. HALDEMAN, DESIGNER

Photo, Margaret Craig



SHOP, GARAGE AND OFFICE BUILDING, HOLLYWOOD, CAL.
MORGAN, WALLS & CLEMENTS, ARCHITECTS

Photo, The Mott Studios

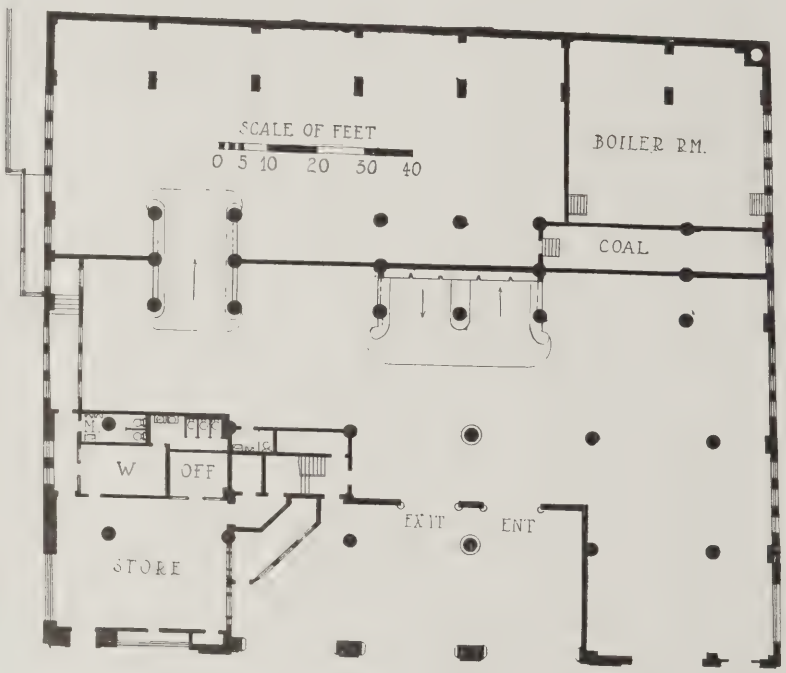


Photo, William F. Cone

Plans on Back

WASHINGTON TERMINAL GARAGE, NEWARK

MARSHALL N. SHOEMAKER, ARCHITECT



FIRST FLOOR

PLANS, WASHINGTON TERMINAL GARAGE, NEWARK

MARSHALL N. SHOEMAKER, ARCHITECT



Photo, W. A. Fishbaugh

STUDEBAKER SALES, SERVICE AND GARAGE BUILDING, MIAMI

The Layout of Automotive Buildings

By HAROLD F. BLANCHARD

Technical Editor, "Motor"

AUTOMOTIVE buildings are different from all other kinds of structures in that they are built largely to house a single article, averaging in size about 6 by 15 feet, movable lengthwise, and having a limited turning radius. Practically all other types of structures are designed to house a variety of articles. Because of the highly special character of automotive buildings, the locating of columns and other limiting features becomes a matter of prime importance, greatly influencing the storage capacity, whereas column location only slightly influences the efficiency with which the space in other types of buildings may be utilized. Then too, the automotive building must be laid out so that cars may be put into and taken out of their parking spaces readily, and this presents a problem which does not occur in most other types of buildings. The storage of cars in a show room obviously cannot follow any set system, but in the repair and storage departments economy of space utilization demands that the arrangement of cars be carefully planned, and here it should be emphasized that layout in the repair or service department is as important as in the storage areas, and in fact the main difference between planning a shop and planning a storage garage is that the cars in the shop require more space.

It is desirable to discuss the layout of the garage first. Therefore let us note that the economy of any garage layout is determined by the smallness of the area devoted to aisles, passages, ramps, elevators, and other non-productive features, and that every proposed layout should be checked according to this principle. While the foregoing may seem to be an obvious statement, an analysis of numerous existing buildings shows that it has received scant consideration. Figure 1 shows the four fundamental ways in which cars may be arranged in a garage. For convenience these may be called the one-, two-, three- and four-row arrangements. All garage layouts are combinations of these. From a car storage standpoint, the one-row arrangement is least economical of space and the four-row arrangement most economical. Use of the one-row arrangement is inexcusable except in rare cases; the two-row arrangement is standard and possesses the advantage that every car fronts directly on the aisle. The three-row arrangement has much to recommend it; it permits the storage of an additional row of cars without requiring any additional aisle space, and it is sufficiently flexible to meet most requirements provided the correct method is used in parking the cars; —when a car enters the building, its owner is asked when he is planning to leave. If he says "early," his car is placed in row B; if he says "late," it is put in row C; and if he is uncertain, in row A. The terms "early" and "late" have a meaning according to the character of the patronage of the garage. If it is an all-night garage, the terms refer to the next morning; if it is a day-parking garage, the terms refer to late afternoon for business men and shoppers and to late evening for theater-goers. This method is used in numerous garages and is fully satisfactory. The four-row method is rarely used, although it is ideal from the standpoint of space economy; but it is objectionable because it makes no provision for customers who are doubtful as to time.

However, dimensions of garage plots must be taken as they come; they are rarely made to order. Therefore, it may happen that a given plot may not lend itself to either the two-row or the three-row arrangement and yet it might be feasible to divide it into two rectangles, one making use of the two-row plan and the other of the four-row arrangement in Figure 2, the net result from a standpoint of convenience being about the same as if the whole building were laid out on a three-row basis.

Before carrying the discussion further, it is desirable to set down a few dimensions. The average car, as already said, may be considered as measuring 6 by 15 feet; large cars are rarely of more than 17 feet, and Fords are 11 feet in length. Thus a garage meant for average-sized cars will be satisfactory if the usual depth of car space is figured as 15 feet, and the aisle width as from 18 to 20 feet, while frontage per car should be 7 feet (6 feet plus a 1-foot space). The frontage per car is net, and to it there must be added any frontage wasted by columns. Not allowing 1 foot for the wall thickness, the breadths of buildings employing the one-, two-, three-, and four-row arrangements are respectively approximately 35, 50, 65 and 80 feet, as indicated in Figure 1. Usually one dimension of the plot will approximate either sums or multiples of these dimensions, or more accurately, since we are mainly interested in the two- and three-row arrangements, we must divide the plot up, if possible into sections measuring approximately 50 and 65 feet. In other words, if a plot were 100 by 110 feet, other things being equal, it should be divided into two 50-foot units 110 feet long. If 100 by 115 feet, it would be divided into two 50-foot units 115 feet long, or into two units, one 50 feet wide and the other, 65 feet wide, each 100 feet long. These arrangements are indicated in Figure 3. Looking at C in Figure 3 it should be noted that while this layout consists fundamentally of a two- and three-row arrangement, row Y is purposely placed adjacent to row X instead of adjacent to row Z, for with the arrangement shown the cars in row X are exposed whenever cars are absent from either row W or Y. With this arrangement there is twice the chance of getting at the cars in row X.

While it is usually desirable to lay out the entire

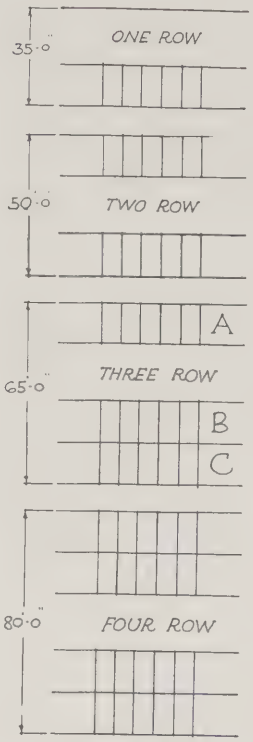


Figure 1

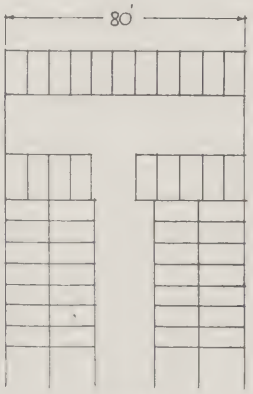


Figure 2

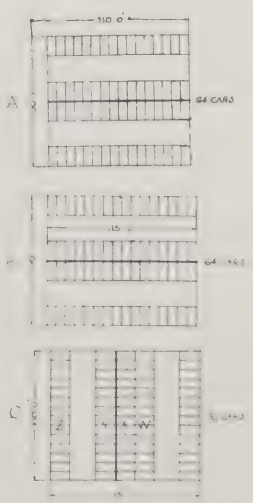


Figure 3

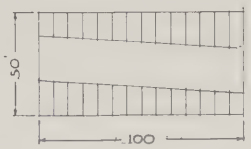
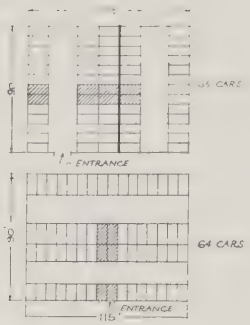
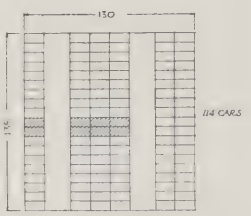


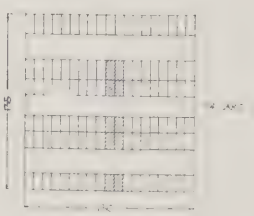
Figure 4



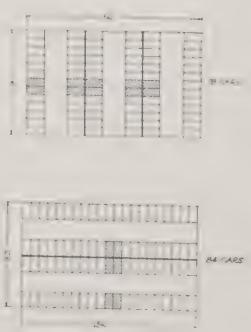
NOTE THE SHADED AREAS ON THIS AND FOLLOWING PLANS INDICATE CARS WHICH MUST BE REMOVED IF THE STREET IS PARALLEL TO THE ROWS OF CARS INSTEAD OF AT RIGHT ANGLES TO THEM

Figures 5 and 6

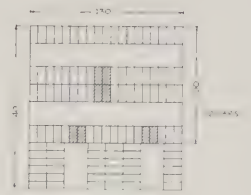


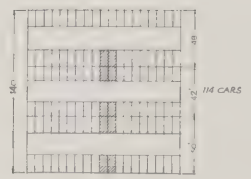


Figures 7 and 8

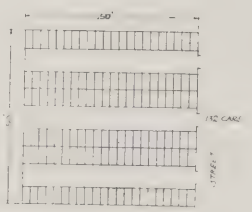


Figures 9 and 10





Figures 11 and 12



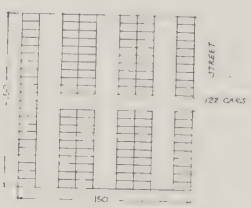


Figure 13

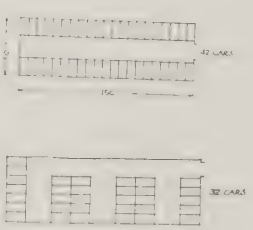


Figure 14

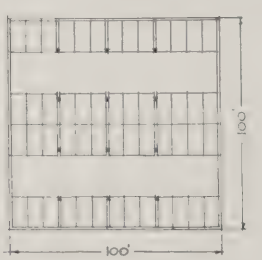


Figure 15

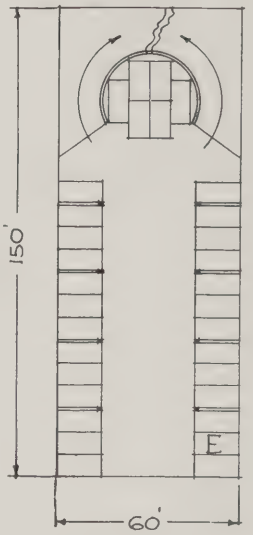


Figure 16

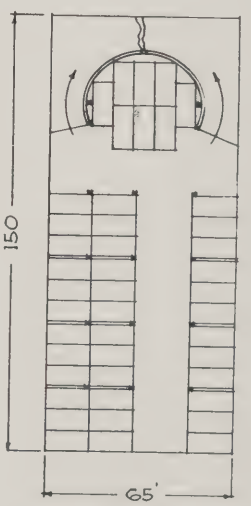
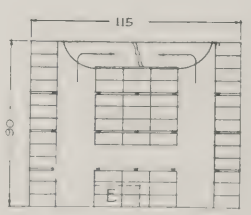


Figure 17



NOTE E WITHIN DOTTED AREA INDICATES POSITION FOR ELEVATOR IF USED

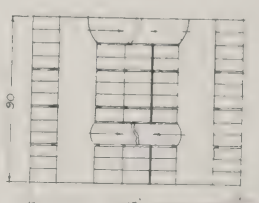


Figure 18

building for cars having an average length of 14 or 15 feet, there are times when better results will be obtained by segregating cars according to their sizes. As already said, Fords are only 11 feet long, and other cars in this class are only a trifle longer. Therefore if one section of the building is set aside for Fords and other cars of similar size, and assuming that a 16-foot aisle is sufficient for 11-foot cars, the net breadth of a two-row building becomes 11 plus 16 plus 11, or 38 feet, and similarly a three-row building would be 49 feet. On the other hand, conditions may warrant making the building, or at least one section of it, exclusively for large cars, say averaging 17 feet, with a 22-foot aisle. Thus the net breadth for a two-row arrangement becomes 56 feet and for a three-row arrangement 73 feet. The need for a large-car section is, however, exceedingly rare except in the wealthiest sections of our largest cities. In most cases the large cars may be averaged with the smaller so that more than a standard width section is unnecessary. Where the breadth of the building is limited, as it would be for example in erecting a garage on a 45-foot plot, the best results will be obtained by arranging the cars progressively according to length as is shown here in Figure 4.

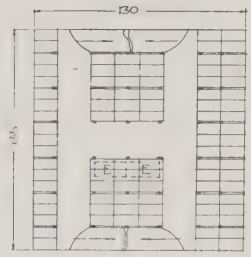
Before comparing the layouts in Figures 5 to 12, it is necessary to note that while the standard frontage per car is about 7 feet, some garages may have frontages of as little as 6½ feet, while a few may even have 7½ feet or more. Obviously the less the frontage per car the greater is the storage capacity of the building, and 7 feet represents a fair compromise between economy and convenience. For reasonable convenience, exceptionally wide aisles permit some reduction in the frontage per car as given here.

These diagrams, by the way, up to Figure 14, represent the *internal* dimensions, to which the thicknesses of the walls should be added. Figures 5 and 6, 7 and 8, 9 and 10, 11 and 12 are pairs of plans showing comparative arrangements for the same plots with advantages and disadvantages explained. Figures 5 and 6 accommodate 65 and 64 cars. Figure 5 has the advantage that all spaces are of standard size, and Figure 6 has the advantage that all cars face directly on aisles. Figure 5 has the disadvantage that one row of cars does not face directly on the aisle, and Figure 6 has the disadvantage that one section of the garage is only suitable for Fords, being 40 feet wide, while the other is suitable for all cars, being 50 feet wide, although by storing medium-sized cars in both sections, with cars arranged so that the aisles are of equal width, the garage becomes two 45-foot sections. This may be done after the building is erected, as it does not involve any change in building construction. In short, this is a feasible layout for a 90-foot plot and might be preferable to Figure 5, depending on the type of patronage.

Comparing Figures 7 and 8, it is to be noted that both accommodate the same number of cars,—114. Figure 7 has the advantage that car spaces are of standard depth, and also the slight disadvantage that there are six rows of cars served by two aisles. Plan 8 has all cars facing directly on aisles, but the dimensions are less than standard, although satisfactory for most locations if the cars are segregated in three sizes to fit the 40-, 45- and 50-foot dimensions. Figure 9 has the disadvantage that it accommodates six less cars than Figure 10 and the advantage that spaces are of standard size. If the floor space has no columns, as might be the case in a one-story building, either arrangement could be used at the option of the operator. Figure 12 is preferable to Figure 11 in that it accommodates more cars more conveniently. While the middle section is of only 42 feet, the end sections are of 50 feet, and where advisable cars may be arranged to reduce the breadth of the end section, thus increasing the breadth of the middle section, and if all three sections are made the same breadth they will be 47 feet, 4 inches, which is fairly close to the 50-foot standard already mentioned.

For simplicity the introduction of columns, ramps or elevators on these diagrams has been ignored, while the shaded portions indicate car spaces that may have to be left vacant to provide connecting passages between the aisles. In Figure 5 if there is a garage entrance at one end of each aisle no connecting passage will be required, whereas if the entrance is placed at the left or right of the plan it will occupy two car spaces, while the connecting passage takes up six car spaces making eight altogether, reducing the car storage capacity to 57. In Figure 6 if there are two entrances at right or left, no connecting passage is required, but if the entrance is at top or bottom, six cars are lost. The reader may make similar analyses for the other plans. In some cases the car capacity lost in passages may determine the layout as shown in Figure 13, which illustrates two ways of laying out a plot 150 by 150 feet. Assuming that this is not a corner lot, whether the rows run vertically or horizontally makes a difference of ten cars. And similarly in Figure 14, the way in which the cars run makes a difference of ten.

In one-story garages it is hardly necessary to use columns for roof supports if the spans are of 75 feet or less, and trusses are not prohibitively expensive for spans running in excess of 100 feet. Generally speaking, the fewer the columns the more useful the building. In case the fact has been overlooked, let it be emphasized here that the layouts of all structures, including one-story buildings without columns, should be carefully worked out in detail. While it is true that the area in a one-story building without columns lends itself to different arrangements of cars after it is erected, which arrangement is most satisfactory often depends on the location of the entrance doors and other features which cannot be conveniently changed after the building is completed, although they can usually be moved around at will on the plan. To illustrate this point, suppose a 90 by 115-foot building without columns were erected and the entrance placed as indicated in Figure 6, and that after the building was finished this layout for



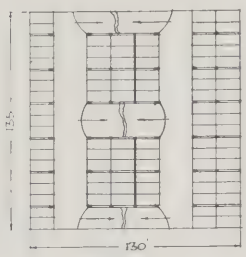
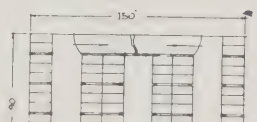


Figure 19



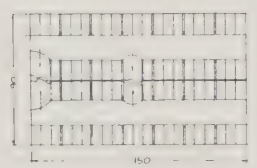
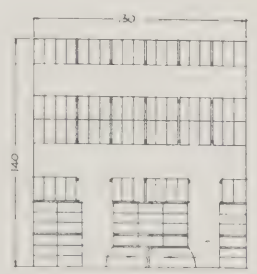


Figure 20



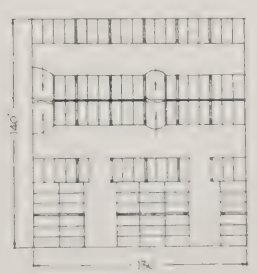


Figure 21

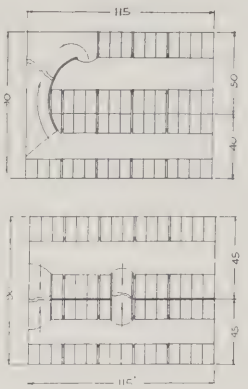
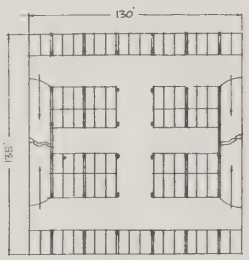


Figure 22



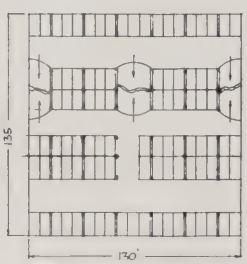


Figure 23

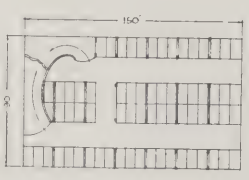


Figure 24

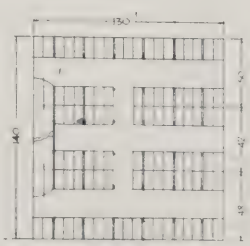


Figure 25

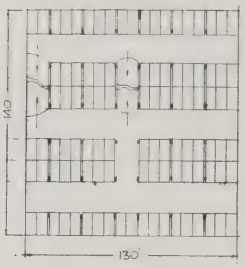


Figure 26

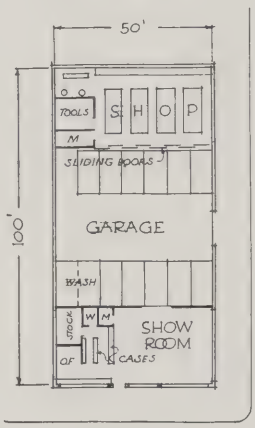


Figure 27

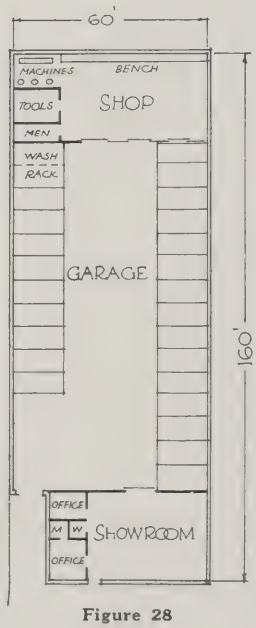


Figure 28

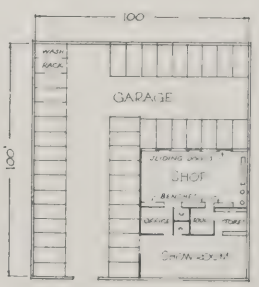


Figure 29

some reason was felt to be inferior to that of Figure 5. Changing the car arrangement to that of Figure 5 would be impossible unless a new entrance were built opening on one of the aisles, whereas if the entrance had been placed at this point originally, the arrangement of either Figure 5 or Figure 6 could have been used at will after the building was finished.

In very small garages, say of 50 by 50 feet and less, the method of car arrangement is not of much importance, since as business increases the owner invariably packs the space full, and obviously a garage without any aisle represents 100 per cent storage efficiency regardless of what theory of arrangement was used in its design. A glance at Figures 5 and 12 will show that if roof columns are to be used, if they are placed along the black lines they will not interfere with car storage so long as the layout indicated is followed, and in some cases the columns which support the roof may be located so that they do not interfere with two possible arrangements. For example, in Figures 9 and 10, if the roof columns are placed at the intersection of the black lines when the two plans are superimposed they will serve equally well with either car arrangement. Figure 15 illustrates the column arrangement for a building 100 by 100 feet. Ordinarily there should be a column for every three car spaces. If this building had no columns, 14 cars could be placed in each row, but with columns a foot or more in thickness, the introduction of even three columns per row reduces the number of cars in the row to 13. Thirteen divided by 3 is 4⅓ bays. Figure 15 shows three three-car bays and one four-car bay, though some might prefer two two-car bays and three three-car bays.

In general, the fewer the columns the greater the frontage per car in a given layout. In other words, in Figure 15 the use of one four-car bay limits the columns per row to three, whereas two two-car bays would require four columns per row, and in some cases this would reduce the car frontage sufficiently to make the four-bay arrangement decidedly preferable,—or it might eliminate one car per row. For the sake of economizing car frontage it is desirable to limit the widths of the columns measured along the frontages to 18 inches if possible. In tall buildings requiring columns more than 18 inches in diameter to support the lower floors, this requirement may be fulfilled by using elliptical or oblong columns in place of circular or square columns. The columns should not extend into the aisles beyond the fronts of the cars, and it is still better to put the columns back so that the car fronts are 2 or 3 feet in front. Obviously, the farther away the columns are from the aisle the less they interfere with moving cars in or out of their stalls, a detail of importance.

It is now customary to build garages of 11 feet from floor to floor, whereas the figure used to be much larger; but even 11 feet is by no means the minimum height for passenger car garages. There are no cars built today and very few cars in use today with a height of 7½ feet; in fact, there are few cars today with a height of more than 6½ feet. If 7½ feet is taken as the maximum dimension, it is only necessary to add the thickness of floor and beams plus whatever clearance is required for piping. It is rarely that this total will exceed 2½ feet, which brings the height from floor to floor down to 10 feet.

If the structure is more than one story high, some means of transportation between the floors is necessary unless the building is located on sloping ground, in which case it may be possible to have direct entrances to the various floors. Generally speaking, ramps are preferable to elevators, although ramps are usually out of the question in very small buildings and particularly in structures with one dimension of much less than 60 feet, since such a building is narrower than the turning circles of some cars.

Whether to use a ramp or elevators is a question of economy plus convenience. An elevator costs a certain sum to install and a certain sum to maintain. Having calculated the total charges incident to using an elevator, it remains to determine how many more (or less) cars may be stored with an elevator or elevators as compared with a ramp. Then estimate the probable total yearly income on these car spaces and see how it compares with the total cost of running the elevator. On the whole, a ramp is so much more convenient and satisfactory than an elevator that the modern tendency is to select the ramp without giving the elevator any consideration at all. The ramp gives vastly quicker service, requires no operator, cannot break down, and involves no operating expenses, although if the building is only two stories high and the upper floor is devoted wholly or largely to repair work, the tendency is to use an elevator because it takes up less area and is reasonably satisfactory considering the small number of cars to be transported to and from the second floor. For similar reasons elevators are still largely used in service stations, although as already said they have been almost entirely abandoned for ramps in the construction of storage garages. If possible, the ramp grade should be limited to 15 per cent, although grades running up to 20 per cent may be used where circumstances prevent the use of grades less steep. In fact the main reason for advising a 15 per cent limit is the prejudice that exists against steeper grades. A 20 per cent grade is perfectly safe, especially with four-wheel brakes. Ramps of many grades are in use.

In laying out a multi-storied building, usually best results are obtained by first determining the ideal plan for a one-story structure. This plan is then followed for all floors, introducing ramps or elevators as required. Column locations should not be determined until after the most suitable one-story layout is decided upon, yet in calculating the number of cars per floor some allowance must be made for columns; hence it is often convenient to add a column allowance of from 4 to 6 inches to the car frontage of 7 feet, whether to use 4 or 6 inches depending mainly on the height of the building. If columns of 1-foot section are to be employed, use 4 inches,

and for 1½-foot columns use 6 inches. In the latter case the frontage per car, including column allowance, becomes 7½ feet. After the ideal one-story layout is obtained on this basis, columns may be introduced where required without changing the number of cars per row. This gives a successful plan.

For the sake of space economy it is usually desirable to use the same ramp location on all floors, that is, the ramps should be located like flights of stairs, one over another. The older method was to start the ramp at one corner of the building and allow it to run to the top in one unbroken sweep along the outer walls. This method is generally wasteful of area because of the space above and beneath the ramp that cannot be used for car storage. Inasmuch as the whole principle on which a garage is laid out is rectangular, curves are always wasteful of area and should not be used unless there is no alternative. In other words, ramps with few exceptions should be straight and should be placed at right angles to the aisles. A width of 9 feet is ample for a straight ramp directly approached, but since most ramps are approached from an aisle at right angles to the ramp, the width of the ramp should be two car spaces wide, or nearly so, and never less than 12 feet. If the ramp is to be wide enough to accommodate two cars going in opposite directions, it should not be much less than three car spaces wide. The ramp should have curbs about 8 or 9 inches high, and the floor should have cross corrugations to give good traction to moving cars when wet.

Before laying out the ramp it is necessary to determine whether a single roadway or a double roadway is required. An absolutely exact answer to this question cannot be given, but under average conditions of traffic in and out of the garage the dividing line is probably for a garage of about 300 cars. For buildings accommodating 300 cars or less a single-track ramp will usually be satisfactory, and larger buildings should have double-track ramps. In buildings, with single-track ramps, provided the traffic is not too heavy (and it is not likely to be too heavy in a 300-car garage) little or no difficulty is experienced by cars approaching from opposite directions, mainly for the reason that the ascending car is in second or low gear and thus makes sufficient noise so that the operator of the descending car has ample warning. With a single-track ramp it is necessary to have points at which two cars may pass readily, and with a properly laid out ramp system this is secured by allowing the cars to pass in the aisles. Figure 16 illustrates a ramp layout for a 60-foot building. The use of a circular ramp is unavoidable. A straight ramp along one side wall might be used instead, but it would not permit the storage of any more cars than indicated. The main portion of the building is wide enough for three rows of medium-sized cars instead of two rows as shown. Figure 17 shows a 65-foot building with a circular ramp. Right and left halves of this ramp are laid out on a 30-foot radius, inasmuch as a 30-foot radius is sufficient for all but an occasional large car. Using the maximum radius of 32½ feet cuts down the number of cars that can be stored in the floor area.

Figures 16 and 17 illustrate about the only exceptions to the statement that a straight ramp is preferable. In both these cases, straight ramps could be used, but no space or other advantages would be gained. On the other hand, these two circular ramps are not objectionably wasteful of area and may be employed to advantage in buildings of this size, displacing elevators. These ramps are practically continuous circles, so a width of 10 or 11 feet is sufficient.

Figures 18 to 25 show Figures 5 to 12 equipped with ramps. It will be recalled that Figures 5 to 12 are for one-story buildings without columns. So that an accurate comparison of these same layouts with ramps can be made, columns have simply been "squeezed" into Figures 18 to 25. This is incorrect, but it is pardonable for the sake of comparison. If there seems to be a sameness about these ramp designs it is explainable by saying that the designs follow the well established principles of planning convenient, economical layouts. It is freely admitted that many other ramp arrangements might be used, but none with the same economy and convenience. In these plans, let it be emphasized, the floor patterns and the ramp locations are the same on all floors.

Principles of layout demand that the ramp be fitted into the layout instead of building the layout around the ramp, and, furthermore, that the plan utilized be what would be considered an ideal layout for a one-story building. In other words, the proper way to develop a plan for a ramp garage is to make several layouts assuming that a one-story building is to be built on the plot under consideration, and then to install the ramps with as little change in these layouts as possible. After this has been done, the most attractive layout should be selected. And it was to illustrate the principle of using a one-story plan in a multi-storied building that Figures 18 to 25 have the same general layout as Figures 5 to 12.

Incidentally it should be noted that with some plots one or more layouts may exhaust all the possibilities, whereas with others there may be ten or even 20 possible layouts, all of which should receive careful consideration. Figure 18 has a single-track ramp, which should be sufficient for a building of this area even if built five or six stories high. Figure 19 is shown with two ramps, one for up and the other for down travel, but a single ramp should suffice if the building is of less than four stories high, including the first floor but not including the basement. Obviously in determining whether a garage is large enough to require a double-track ramp, only the capacity above the first floor is of interest since cars going to the basement or the first floor do not add to the congestion of the upper ramps. In Figures 18 to 25, after a car leaves one ramp it reaches the next ramp by driving along the aisles and through the passages connecting the aisles. These passages are shown as two-cars wide, an ample width even

where separate up and down ramps are used, since all the rest of the system is double-track. However, in actual operation there is no reason why the passages may not be three cars wide except occasionally when extra storage space in the passage is required.

There are a number of special ramp designs, some of which have merit and some of which have none. The Commodore-Biltmore Garage in New York, for example, has two flights of U-shaped ramps branching from each side of the central aisle. This ramp design is highly ingenious, but it is wasteful of space, and the ramp designs shown herewith considerably exceed it in economy of car storage. In addition this design requires a building about 140 feet along one dimension.. A garage in Boston has a circular ramp running up and down through its center with separate tracks for up and down travel. There is no criticism of this ramp from the driver's standpoint, but it has a most serious shortcoming from the garage owner's point of view, since it occupies an enormous amount of good car storage space and thus greatly lessens his possible revenue. It is about typical of what happens when a circular ramp is used.

Some garages have even been built with continuously sloping floors, but it is questionable whether any of them will accommodate more cars than buildings with conventional ramps, and there are some disadvantages. A structure with sloping floors is a special building which can never be used for anything but a garage, regardless of how conditions may change. Cars cannot be pushed conveniently by attendants, and it is understood that the sloping floor garage costs considerably more to build. This type of building has also received some criticism, in that any car standing in the aisle will run away in case the operator fails to set the hand brake. Another disadvantage is that in a building of less than extraordinary size all cars are in the traffic stream, and also it is a long distance from the top level to the street,—at least twice as long as in ramp garages, often more.

A patented ramp design which has become very popular is shown in Figure 26. Rights to use this system are sold on a basis of so many cents per square foot of the total building area. A glance at this drawing shows that the building plan is cut in two halves, and that the floors in one half are placed half-way between the floors in the other half, with ramps connecting the half stories. This method of construction has the advantage that short ramps may be used. Due to the fact that short ramps may often be fitted into a layout more successfully than long ramps, there are numerous garage designs in which more cars may be accommodated with this ramp construction than with the usual straight ramp. All ramps should be built with open sides and should not be closed in to form tunnels. Obviously, a ramp with open sides is safer, since it gives the driver a view of the aisle which he is approaching. Stairways are usually conveniently located in the space that would otherwise be occupied by one car. In some instances building laws require a little more breadth for the stairway than one-car space affords, in which case if the stairway is placed adjacent to a column the width of the space occupied by the column is also available, and almost invariably this space is sufficient for the requirements. When a passenger elevator is required, it may also be placed in the front half of a car space adjacent to the stairway, the rear half being possibly used for a toilet.

If elevators are used for moving cars from floor to floor, the space required per elevator is usually about 10 by 20 feet, the dimensions of the elevator platform being somewhat less than this overall figure. The number of elevators required depends on the amount of traffic, the height of the building, and the speed of the elevators. For a given building it is advisable to obtain the advice of some elevator manufacturer, although a rough figure is one elevator for every 100 to 150 cars. Since an elevator platform is about 5 feet longer than the average car, it must jut out into the aisle 5 feet when placed alongside a row of cars, and yet to place it elsewhere usually complicates the problem further. Referring to Figures 18 and 19, fair results may be secured by locating the elevator at the points marked E. In a long and narrow building, the best location for the elevator is usually in one corner, as in Figure 16, which forces the removal of three or four cars, immediately in front of it to secure an approach.

So far the discussion has been devoted entirely to garages, and so it remains to consider now the layout of repair shops, show rooms, stores and offices in connection with garages. For brevity all these features will be considered together. The first step is to determine how much area must be allotted to each. This is most readily done by answering these questions: (1) How many cars in show room? (2) How many desks in general offices? (3) How many private offices? (4) What lavatory facilities for show rooms and offices? (5) How much counter and shelf space for accessory sales? (6) How much shelf and bin space in accessory stock room? (7) How much shelf and bin space in parts department? (8) How much space in tool room? (9) How many cars in shop? (10) How many cars in quick service department? (11) How many cars in new car department? (12) How many cars in used car department? (13) Ditto for all other departments. (14) What machine tool equipment must be provided for? What wash rack capacity is required? Very few buildings will have all of these departments. The majority of buildings will be limited to a show room, offices, accessory and parts departments, repair departments and car storage. The last need not necessarily be public storage, for it may be the total of cars that must be housed in connection with a general sales and service business.

Insofar as possible, each department should be laid out to occupy an unbroken rectangle,—bays and alcoves should be avoided, for usually they represent waste space. Approximately 250 square feet should be allotted to each car in the show room, 175

square feet for each car on storage, and about 225 square feet for each car in the shop; but these figures do not include space for rooms adjacent to the shop, such as those intended for the parts, tools, etc.

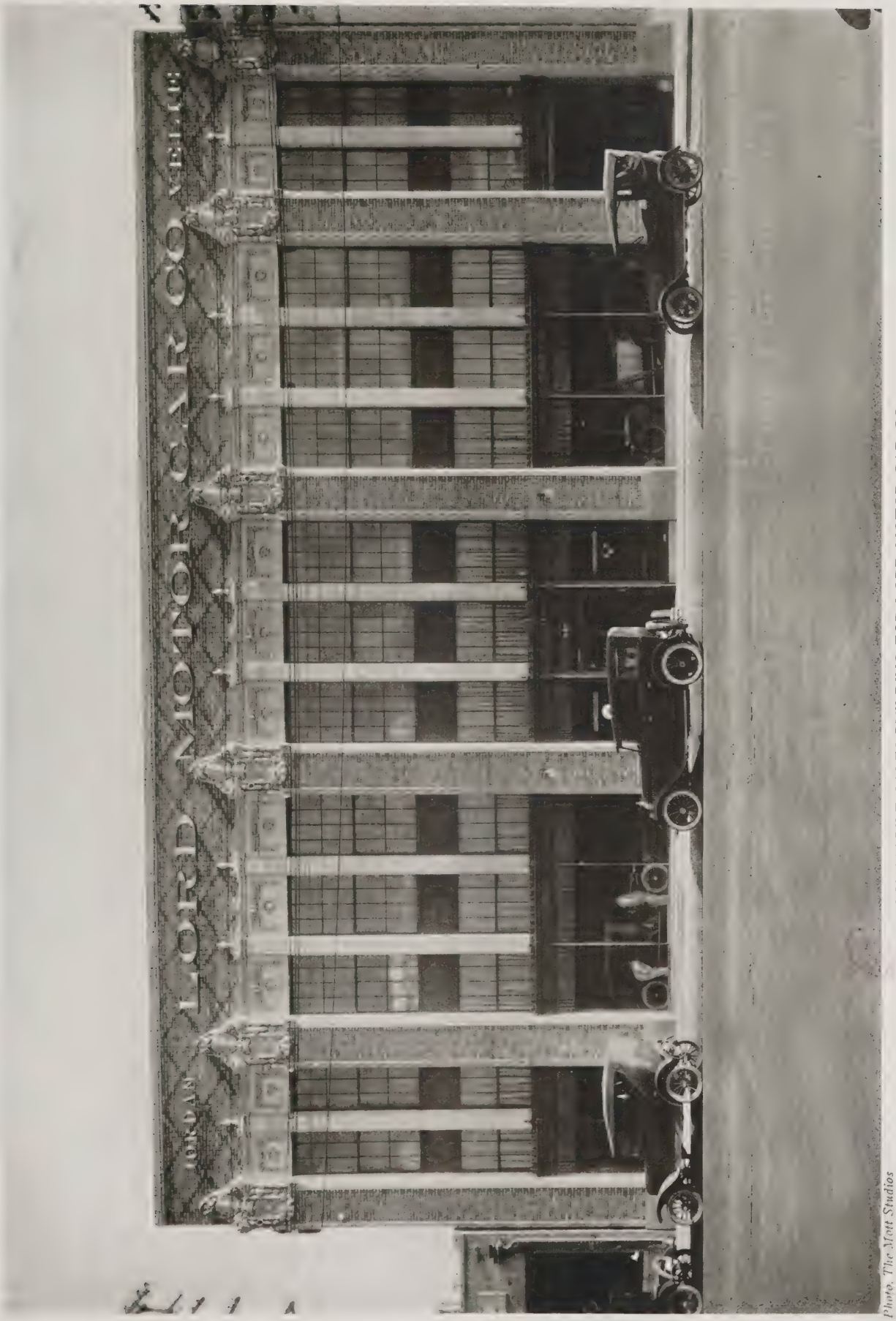
Having calculated the approximate size of the building, it remains to arrange the details of the layout. There are so many possible plans that it is out of the question in the brief space remaining to do more than give the general idea of how the layout should be worked out. Figure 27, for example, shows show room, accessory store, garage and shop layout for a corner plot 50 by 100. Note that the plan divides into three rectangles consisting of sales, service and garage. A series of sliding doors separates the shop from the garage. A feature of the shop layout is that the cars in the shop may be moved directly in or out of the spaces which they occupy without any maneuvering. Cars adjacent to the shop, if in the way, are easily moved, although during the day these spaces are likely to be vacant. Figure 28 illustrates a layout for an inside plot 60 by 160. There is no accessory store in this layout. Three rows of medium-sized cars may be accommodated instead of two rows as shown. The car entrance to the left of the office should be open, with the garage doors at the rear of the space so that light and air may reach the rooms on this side of the building. If this particular plot is on a corner, the cars may be ranged in four cross-wise rows with two garage entrances on the side street. Figure 29 shows one of the numerous layouts that can be used on a 100 by 100 foot plot. At first glance the shop may appear to be inaccessibly located, but the cars adjacent to the shop should either be cars undergoing minor repairs, in other words, cars that are coming and going frequently, or if this space is devoted to car storage the cars in this row should be cars that are always out in the daytime,—that is, during normal shop working hours. These few plans should serve to illustrate the method, since lack of space prevents the discussion of more plans, interesting as they are.

The design of a truck garage is no different from that of a passenger car garage excepting that the sizes of the units are larger. For convenience, it may be assumed that there are three sizes of trucks: (1) delivery cars, the same size as passenger cars, 6 by 15 feet; (2) medium-sized trucks, 6½ by 20 feet; and (3) large trucks, 7 by 22 to 25 feet. In locating columns it is necessary to know approximately what percentage of each will make up the total, although where this is unknown good results may be secured by making the breadth of the garage section from 60 to 65 feet for two rows of trucks and 75 to 85 feet for three rows of trucks. At the same time it is advisable to place the columns 26 or 27 feet apart along the aisle, for if this is done, a bay will accommodate either four delivery cars or three large trucks. For trucks, ramps and passages about 16 feet wide should be sufficient, while an elevator platform for trucks should be about 10 by 25 feet. Practically all trucks will turn in a circle of 70 feet. For most trucks, headroom of 10 feet is ample, although a few require 11 or 12 feet. A good way to solve this difficulty is to make the headroom on the first floor 12 feet, and 10 feet above.

Architects are often puzzled as to the number and location of wash racks as well as to the details of their construction, and this is not surprising, for it really requires an experienced garage operator to solve these problems. Generally speaking, the location of the wash racks depends on the character of the business. If in the garage under consideration it is likely that washing service will be included in the rental charge for nearly all car spaces, it is desirable to have at least one wash rack per floor for the sake of convenience. In such a garage it is customary to wash cars every day or nearly every day that they are in use, the washing being done at night.

In garages where washing is charged for separately, cars will be washed less frequently,—from once a week to once a month, depending on the character of the trade. In this case a wash rack may be placed on each floor, although in such garages there is a tendency to perform all the washing operations at one point, usually with the installation of so-called "auto-laundry" equipment. There are numerous manufacturers of this equipment; the details of the installations vary considerably, but in principle at least all modern auto laundries have at least four "stations" through which the cars pass progressively. At Station 1 interiors are cleaned with brooms, compressed air, vacuum, or combinations of these; at Station 2 the running gear is cleaned by water delivered at such velocity that it knocks the mud off without the need for much brush or sponge work; at Station 3 the body is washed off with a fine spray and sponges; at Station 4 the body is wiped dry, water being blown out of crevices by compressed air. The metal is polished at either Station 1 or 4. The four stations are strung out in single file so that the car may be rolled from one to the other.

Greasing racks have become popular in recent years, their sole purpose being to elevate the car so that a mechanic may walk under the car and thus grease it with maximum convenience. This is usually done by running the car onto rails. If possible it is preferable to have the rails set flush with the floor while the floor of the greasing pit is depressed about 4 feet. If this is done, no space is wasted in approaches, and the grease rack may be comfortably placed in the space occupied by two cars. If elevated rails are used with a flush floor, sloping rails must be used for the approach, and these take up space and obviously prevent installing a grease rack in a single row of cars, although there is room to install sloping rails in a double row of cars. If all rows are single rows, and depressing the grease pit floor is objectionable, an alternative arrangement is to buy a grease rack with rails that are raised by power. Thus the rails are at floor level when the car is driven on, and after the car is in place the rails are raised vertically 3 or 4 feet. There are several such devices.



AUTOMOBILE SALES BUILDING FOR LORD MOTOR CAR CO.
MORGAN, WALLS & CLEMENTS, ARCHITECTS

Photo, The Mott Studios



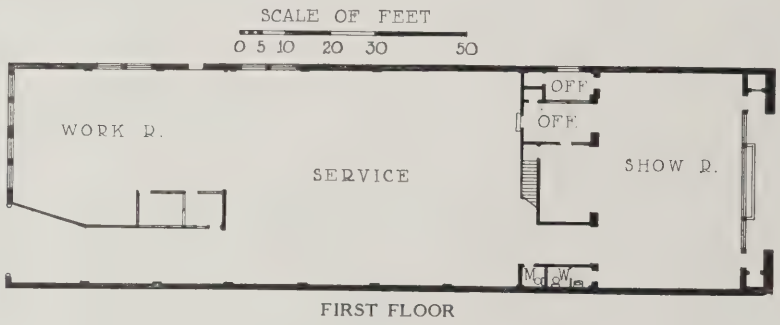
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Plans on Back

AUTOMOBILE SALES AND SERVICE BUILDING

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MORGAN, WALLS & CLEMENTS, ARCHITECTS



PLANS, FRANKLIN MOTOR CAR CO. SALES AND SERVICE BUILDING, HOLLYWOOD, CAL.

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STUDEBAKER SHOW ROOMS AND GARAGE, BROOKLYN
TOOKER & MARSH, ARCHITECTS



Photo, John Adams Davis

UPPERCU CADILLAC CORPORATION SALON, NEW YORK

CHARLES E. BIRGE, ARCHITECT



Photo. The Mott Studios

A PIERCE ARROW SALES AND SERVICE BUILDING



Photo. Margaret Craig

BILTMORE GARAGE, LOS ANGELES
SCHULTZE & WEAVER, ARCHITECTS



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STUDEBAKER SALES AND SERVICE BUILDING, SAN DIEGO



Photo. Thomas Ellison

PACKARD MOTOR CAR COMPANY, SALES AND SERVICE STATION, DETROIT

ALBERT KAHN, INC., ARCHITECTS

Architecture and Decoration of Automobile Show Rooms

By WILLIAM F. WHARTON

THE making and selling of automobiles have rapidly grown to be one of the foremost industries of America; it is likewise one of the most spectacular. Within a comparatively few years the automobile industry has leaped to the front in a manner nothing short of amazing. Its effects are felt and seen in every direction. From the congested traffic in the streets of our cities to the pages of every magazine and newspaper we pick up, we are constantly reminded that we live in the "Age of the Automobile." One of the most conspicuous details attending this development is the creation of the display rooms maintained by manufacturers where the latest models of every type of motor are displayed in a manner becoming their importance and prestige. These show rooms, almost without exception, bear witness to a determination on the part of the makers to hold up their end of the many-sided spectacle by displaying their creations in an environment carefully devised to appeal to the eye and to win the interest as well as the approval of the most exacting customers. Even in the smaller cities and larger towns, the automobile show rooms present a spacious air of distinction that marks their presence and their purpose so unmistakably that the most casual passer-by cannot fail to be impressed. In the larger cities, the architecture and decoration of show rooms have been carried much further, and their designing and equipment have become significant and highly specialized fields of architectural and decorative endeavor by well known designers.

The keen rivalry in creating automobile show rooms that shall be imposing from their sizes and their fitness for the adequate display of the cars, and inviting to the eye of the prospective purchaser at the same time, is a peculiarly American expression. Of course the maintaining of these splendid exhibition places is all part and parcel of a carefully built-up system of advertising and salesmanship, and their effect upon patrons has been duly considered. The expenditure of the large sums involved cannot by any means be set down to mere vainglorious "swank." It is natural, therefore, that the direction of this movement and the expense which it involves should be subjected to close scrutiny, and watched in every detail with more than usual interest. It is natural, too, in the absence of any considerable body of long established precedent or experience, that the pioneers should not always tread with the assured confidence of those who know exactly where they are going and just how to get there. Some of the efforts have necessarily been a trifle tentative and

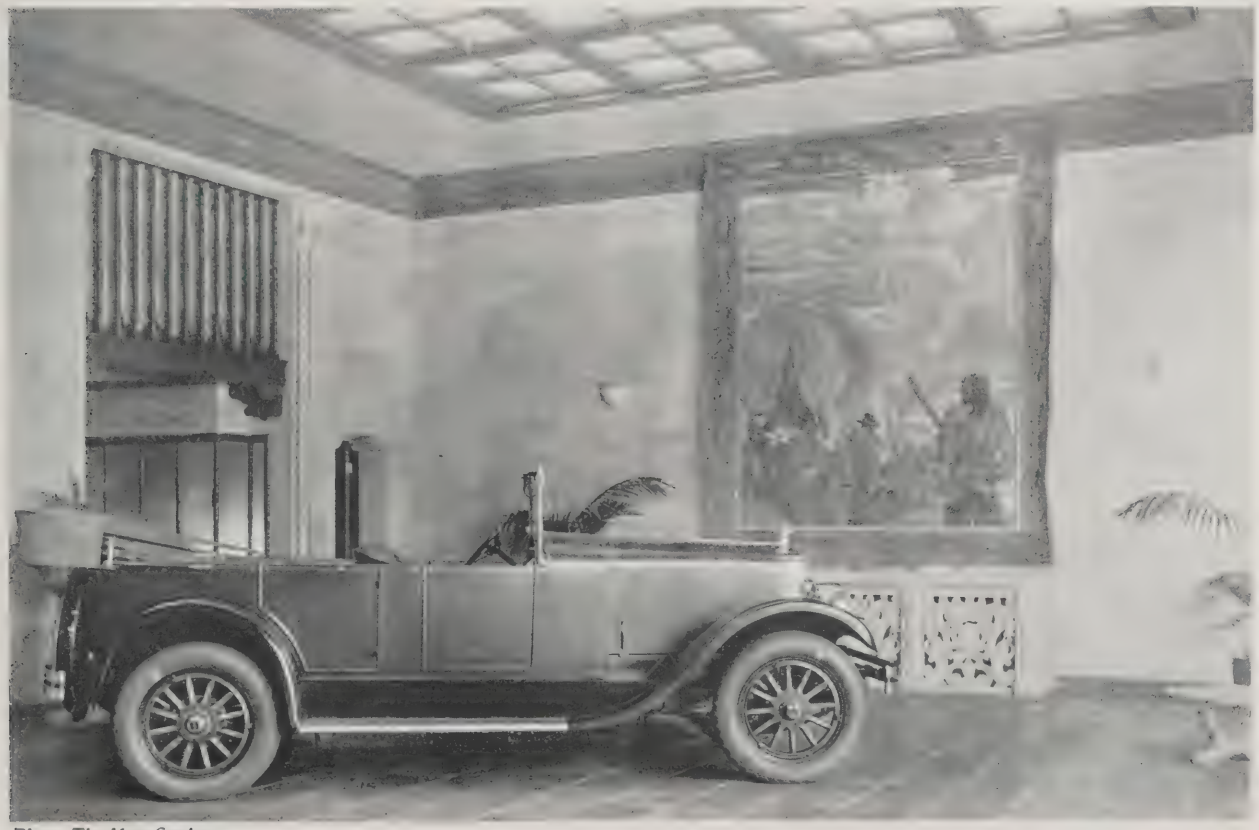


Photo. The Mott Studios

Effective Architectural Treatment of an Automobile Sales Room
Morgan, Walls & Clements, Architects



Photo, Thomas Ellison

DETAIL, SALES ROOM, PACKARD MOTOR CAR COMPANY, DETROIT
ALBERT KAHN, INC., ARCHITECTS



Photo. The Mott Studios

SALES ROOM FOR STAR MOTOR CAR CO., HOLLYWOOD, CAL.
MORGAN, WALLS & CLEMENTS, ARCHITECTS



Packard Motor Car Co. Show Room, Chicago
E. E. Roberts, Architect

experimental; some, too, have been distinctly happier than others in their conception and in the finished results. Many display rooms are excellent.

The one aim apparently common to all who have embarked upon the broad program of embellishing their show rooms has been to invest them, as far as possible, with an air of luxury and leisurely detachment from any insistent suggestion of mere commercialism. The patrons, who presumably are accustomed to and appreciative of luxury, and who are looking with fastidious eyes at the qualities of the cars before them, are to be welcomed amid congenial surroundings. They are to be entertained,—not hurried,—in their inspection. The technicalities and formalities of sale and purchase are not to be over-emphasized by an obtrusive array of desks, typewriters, filing cabinets and other office paraphernalia. The whole conception is, of course, admirable. It is only in working out the many minor details of the scheme that questions arise over the best and most direct way to get at the results proposed. The whole conception has also about it a good deal of originality. It is much easier, however, to be fairly original in roughing out the foundations of a scheme or the large masses of a composition than it is in following all the details to their ultimate finish. The sea, in this particular case, be-



Spanish Details Successfully Used in This Sales Room
Morgan, Walls & Clements, Architects

ing more or less uncharted, we cannot do better than to compare the results achieved in different show rooms and thus arrive at a clearer grasp of the problem along with a rational appraisal of features to be either commended or avoided in designing such rooms.

In announcing the opening of its new building on East 57th Street, New York, the Cadillac Corporation declares that the structure (Plate 60, page 309) "was conceived and executed not as an example of fine architecture, but as a background for fine automobiles." This, in its opinion, is the keynote to the whole situation. Architecturally speaking, the building has had every consideration lavished upon it. A rectangular entrance hall, undisturbed by show window complications; an arched central hall, where the cars are chiefly displayed; and a vaulted rear hall, adorned at its far end by a painting of the Mediterranean and the Riviera seen from Monte Carlo,—these are the outstanding features of the composition. The materials employed throughout, the finish of the walls and ceiling, the wrought iron and gilt lighting fixtures, and the richly elegant movable appointments all conduce to the distinguished luxury of the *ensemble*. This part of the general conception has been extremely well brought to fulfillment. To quote again the corporation's announcement, "this building is a permanent *salon* designed for the pres-



Sales Room, Cadillac Corporation, New York
Charles E. Birge, Architect



Sales Room, Packard Motor Car Co., Philadelphia
Phillip S. Tyre, Architect



SHOW ROOM, MARMON MOTOR CAR CO., LOS ANGELES
JOHN M. COOPER, ARCHITECT



Photo, Thomas Ellison

DISPLAY WINDOWS, PACKARD MOTOR CAR CO., DETROIT
ALBERT KAHN, INC., ARCHITECTS



WINDOW LIGHTING, PACKARD MOTOR CAR CO., DETROIT
ALBERT KAHN, INC., ARCHITECTS



Photo, George W. Hance

SHOW ROOM, DODGE BROTHERS MOTOR CAR CO., DETROIT
SMITH, HINCHMAN & GRYLLS, ARCHITECTS

entation of custom-built automobiles in the setting and atmosphere of a gallery." That is exactly what this carefully studied automobile show room is,—a gallery. But just here a question arises regarding the fundamental appropriateness in the *method* of working out the entire scheme. Admitting the three chief premises that in a gallery, which is to serve as a background for the display of automobiles, there should be (1) an air of luxurious welcome for patrons; (2) adequate display facilities for the cars; and (3) the suppression of obtrusive commercial appointments, no exception can be taken to the appointments of this sumptuous gallery,—as a gallery. The announcement continues: "Here visitors may observe the newest creations of the master body-builders in surroundings of the character to which they are accustomed in viewing other works of art." But there is just the crux. The automobile is distinctly an *out of doors* creation of the manufacturers' art and is normally seen out of doors. It is scarcely feasible, to be sure, to create a luxurious show room out of doors, and this difficulty has no doubt been duly appreciated by architects and designers who have realized the impracticability of creating even the semblance of an out-of-door setting for cars which would not appear unduly artificial and theatrical as well as not be extremely costly. They have probably decided that the best which can be done is to create a dignified, tasteful setting, planned upon an appropriate scale, to emphasize a car's excellence.

Several of the other show rooms illustrated here suggest danger in arranging their appointments. The fault of over-elaboration, in cases of this sort, is very easy to fall into, and the temptations are many. Those responsible for many of the show rooms have doubtless found it exceedingly difficult to steer a safe course between "too little" and "too much." One of the show rooms that seems to be of appropriate luxury, to possess adequate display space, and to present absence of too-apparent office fittings, is the Hollywood gallery of the Star Motor Car Co. (page 307), and yet there is nothing to suggest that the automobiles have been wrested from their natural setting and transformed, for the time being into drawing room furniture or museum exhibts. Another Hollywood show room, that of the Franklin Motor Company, displays the same spirit of consistency in its equipment. There is a tapestry on the wall, it is true, but the main part of the floor is left to the automobiles without any incidents to detract from their prime importance. The Studebaker show rooms at Lakewood, O. and San Diego; the Peerless show room in New York; the Packard show room in Detroit; and various others might be mentioned where all requirements of sumptuous taste have been complied with, and yet one feels that the outdoor nature of the automobile has not been unnecessarily compromised by inconsistency of association. Their designing is probably typical of the best.

That this latest development of the automobile show room into a spacious and beautifully appointed gallery, different by far from a garage, is matter for sincere commendation few of course will dispute, but in making this advance it is not safe to shut our eyes to the inherent nature of the wares displayed or to the importance of maintaining in the setting a character which will accord with that of the article itself. It is an instance in which good taste counts for much, taste not only in actual designing but also in choosing the character of the setting.



Sales Room, Thompson Motor Car Co., Denver
J. B. Benedict, Architect

F. A.

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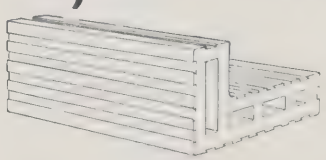
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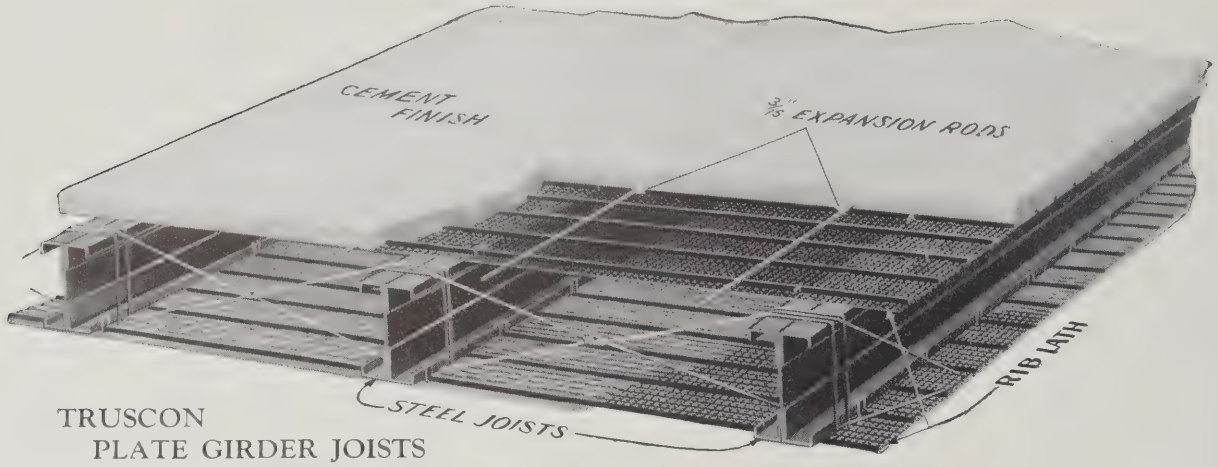
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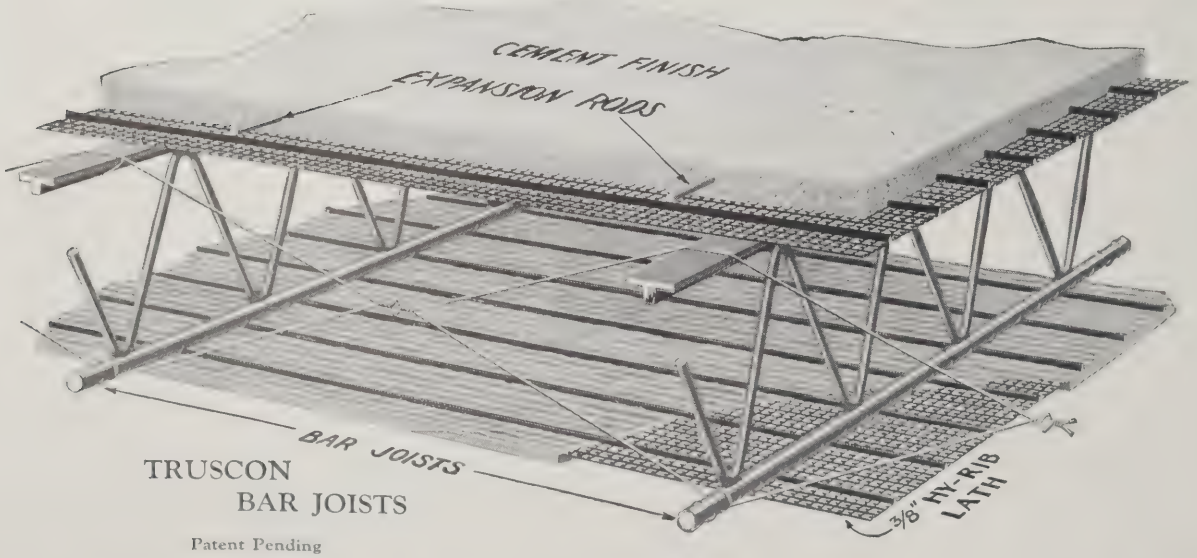
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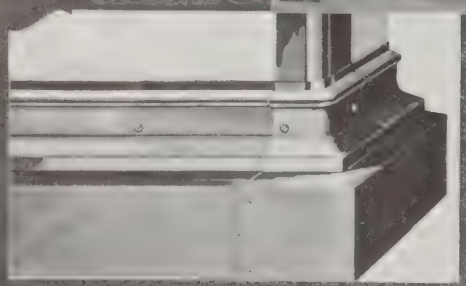
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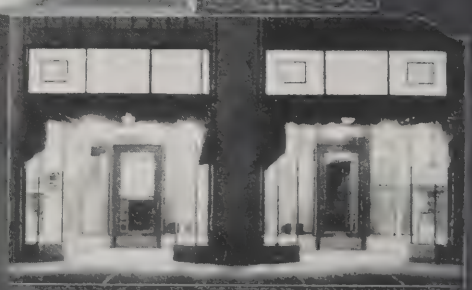
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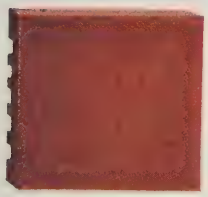
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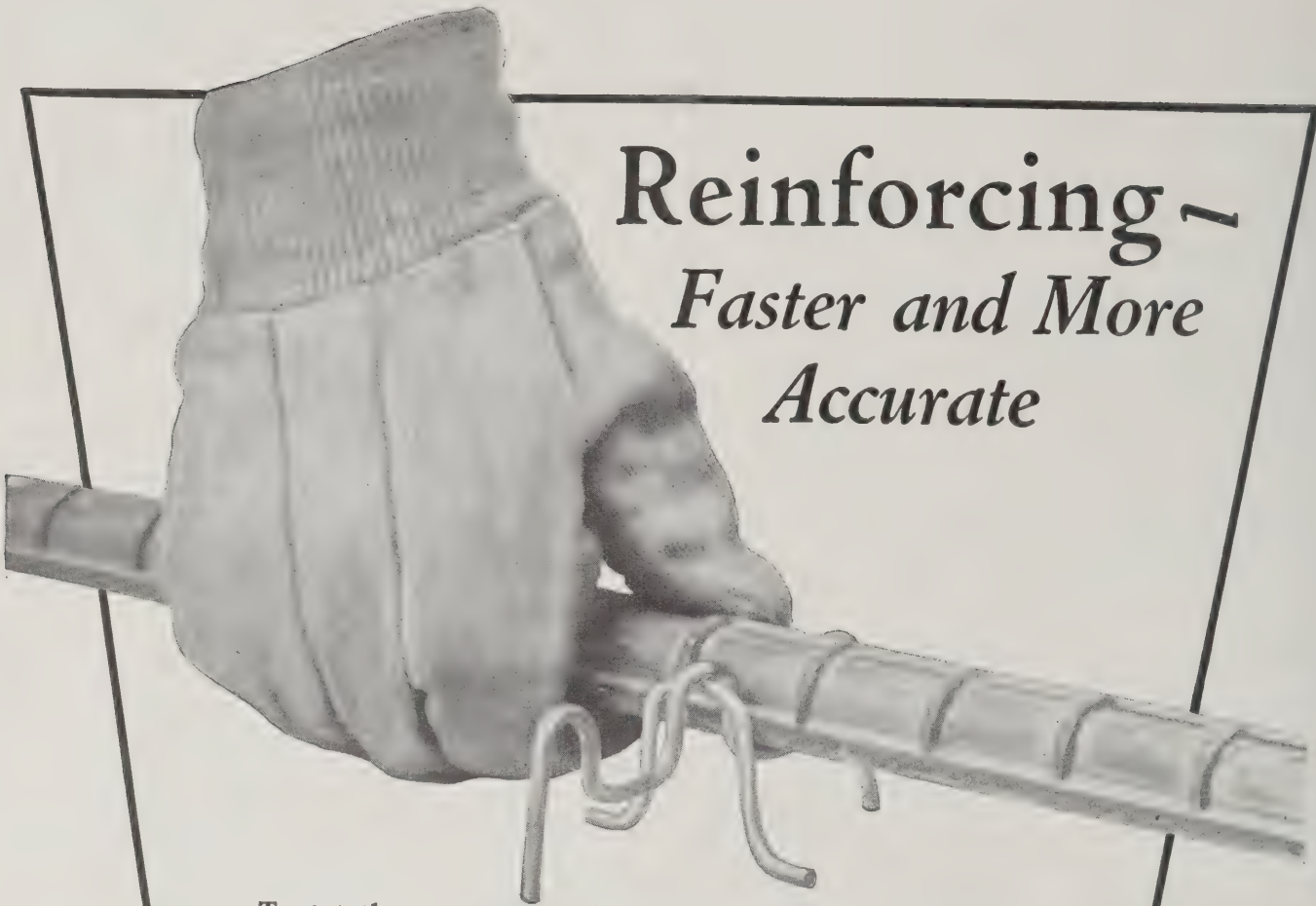


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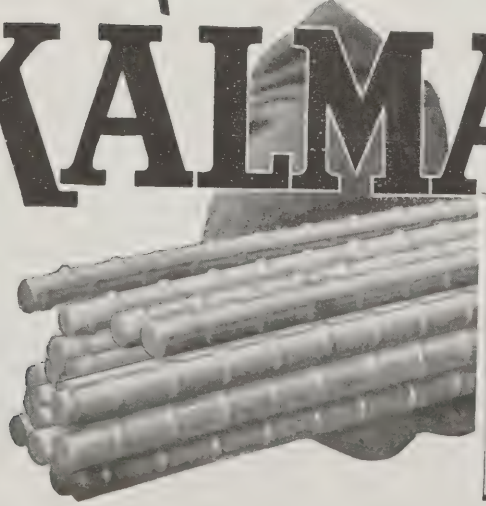
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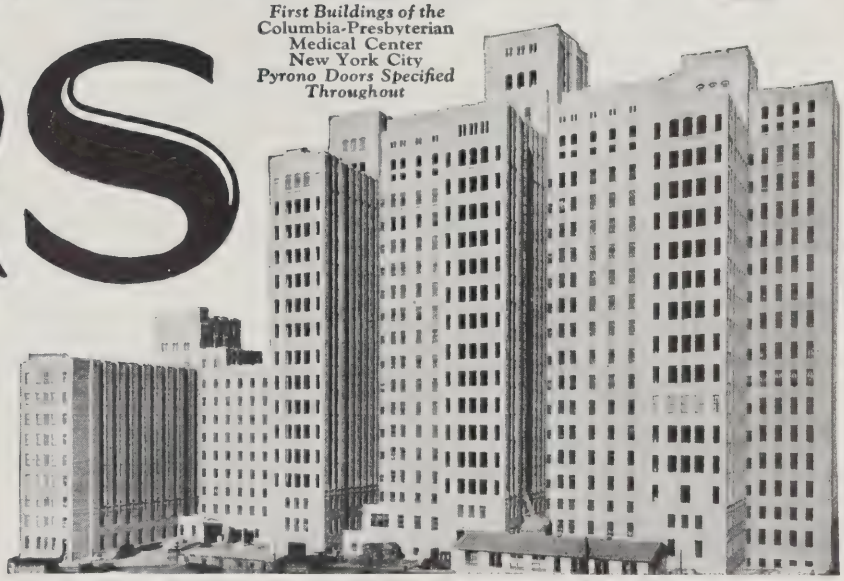
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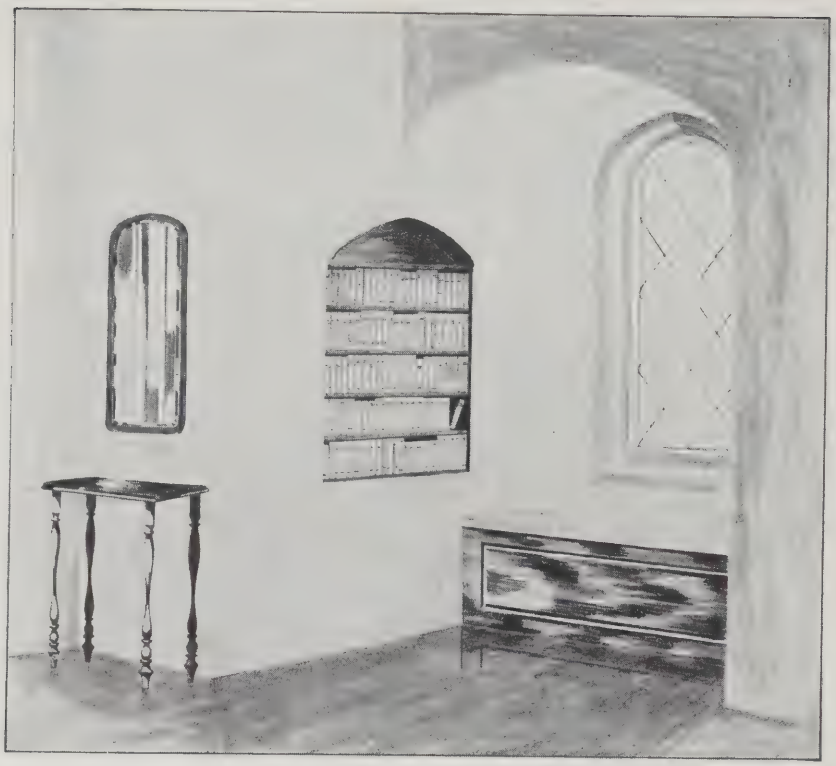
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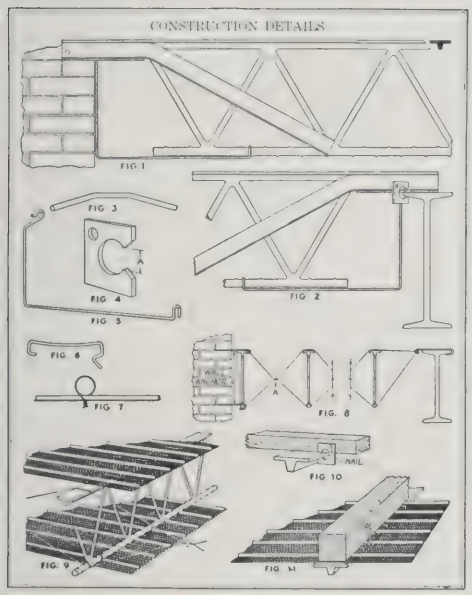


Fig 1—GF "T" Bar Joist bearing in masonry support.

Fig. 2—GF "T" Bar Joist bearing on structural steel support.

Fig. 3—Standard wall anchor.

Fig. 4—Plate clip for connecting the joist to structural bearing.

Fig. 5—Bottom chord extension piece.

Fig. 6—Spring Lath Clip for attaching top rib lath to joist.

Fig. 7.—Tie wires for attaching ceiling lath to joists.

Fig. 8.—Bridging.

Fig. 9—A typical GF "T" Bar Joist and Rib Lath assembly.

Figs. 10 and 11—Screed Clips.

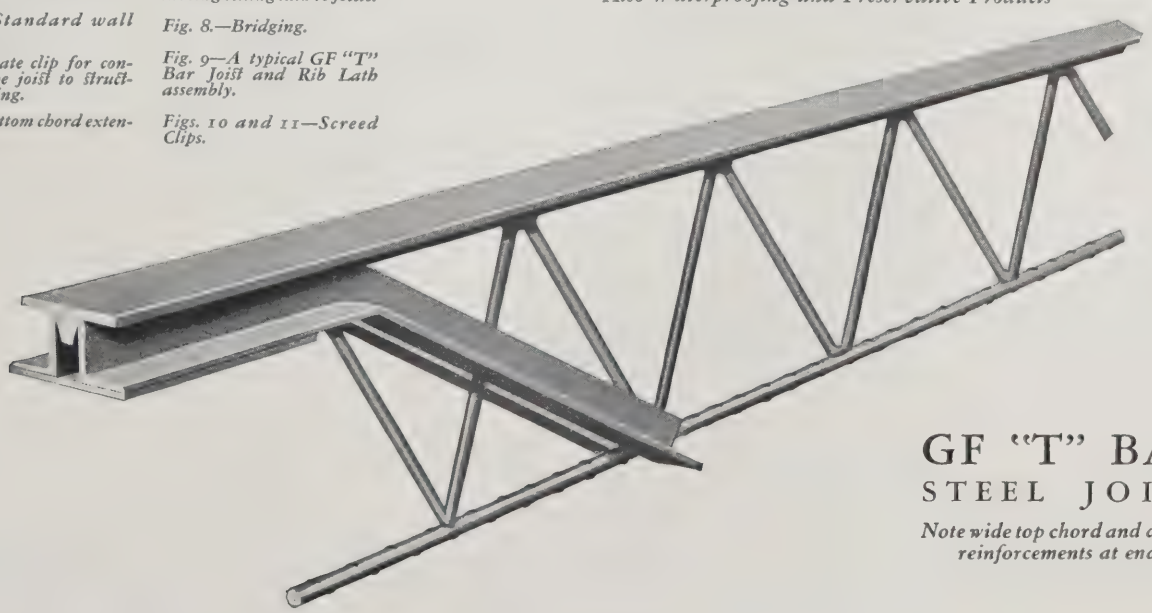
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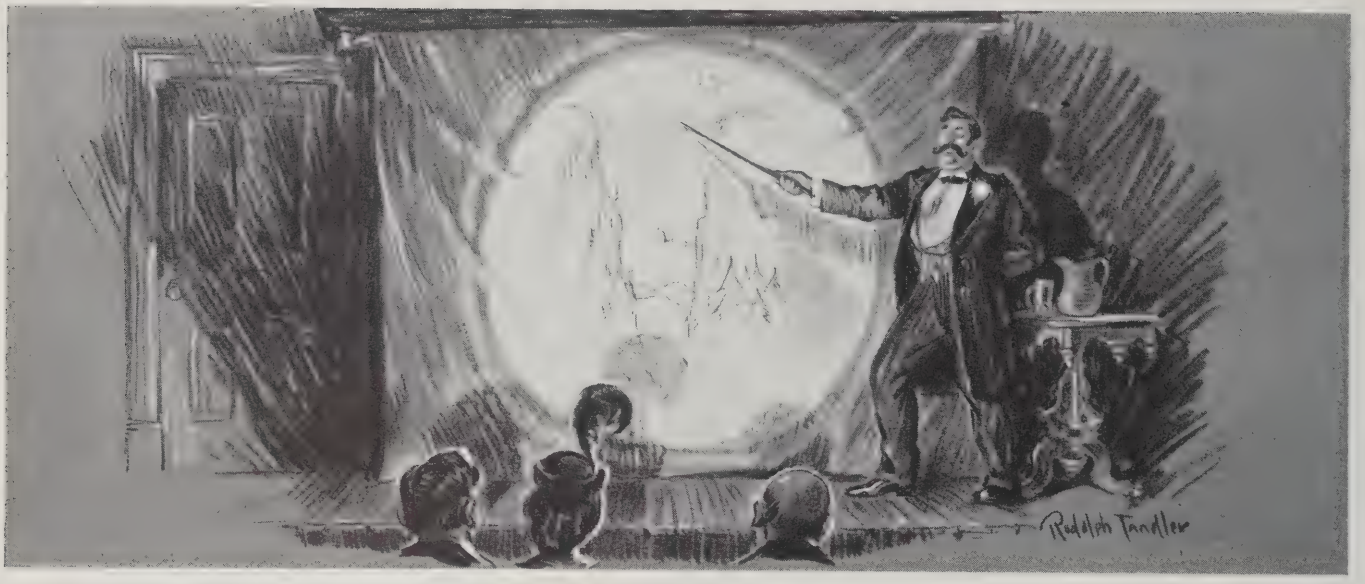
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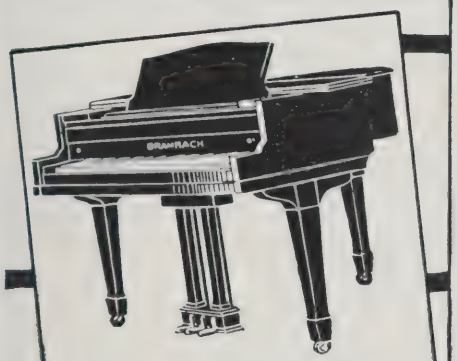
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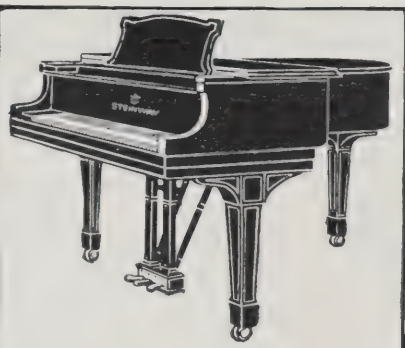
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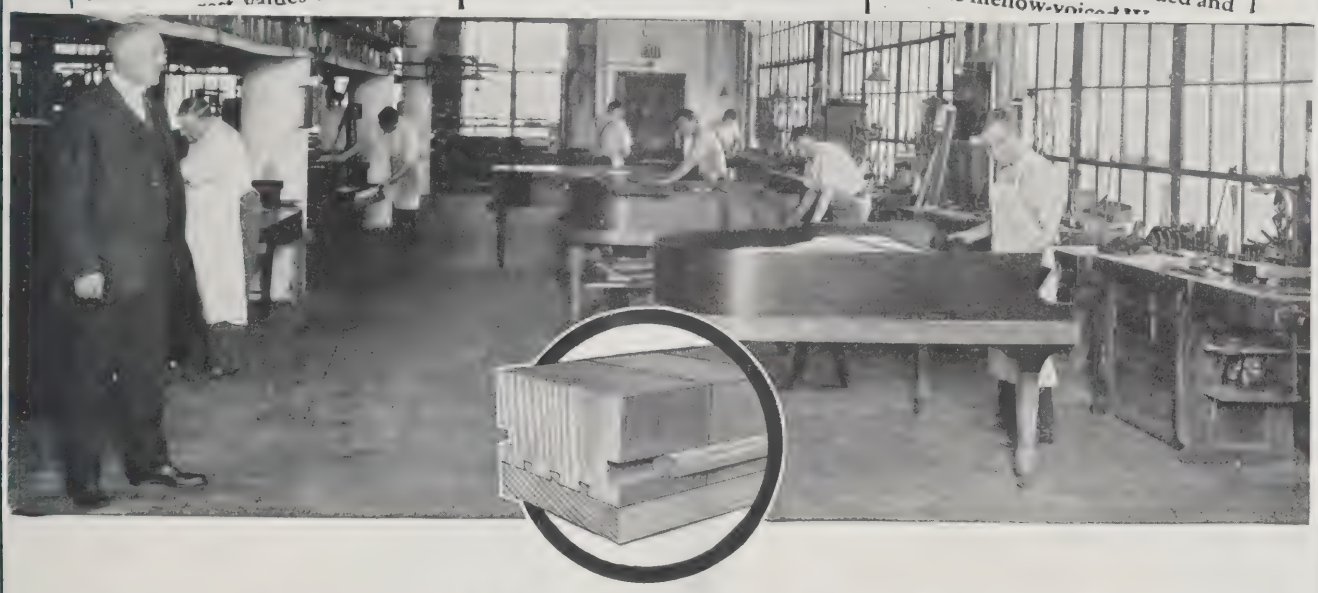
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BOOK DEPARTMENT

The Spanish House in America

A Review by MARGARET NORRIS

THE salient message of every type of architecture is essentially its reaction to climate,—this plus the exigencies of the times which must be met at a particular era. Thus it was the primitive impulse to build an artificial shelter from the sun that developed those peculiar qualities of Mediterranean architecture which characterize the modern house. The Spanish peninsula was among the last of the Mediterranean lands to fall before the Roman conquerors. Hence its architecture is essentially of Roman origin, round-arched and rhythmic. Rome by this time was heir to the art of the ages, acquired from classic Greece and ancient Etruria, and to this Spain herself added by later foreign achievement,—first a wealth of Moorish culture, which came with the conquest of Granada, and later new world influence with the planting of the Spanish flag in Peru and Mexico. Hence the type of house which has emerged from the vicissitudes of Spanish history offers a variety of architecture matched by that of no other country in Europe,—"sun-loving" or "sun-begotten" is the adjective which best describes it. In every aspect it is adapted to life in a sunny land. The *patio*, which is the nucleus of the Spanish house, wherever it is found, is a shaded retreat deep within the house, yet open to the air and light. Small, barred windows temper the brilliance of the light which shines through them; parti-colored tiled roofs reflect it with the dazzling beauty of the rainbow. Heavy stone or clay walls temper the heat and leave the interior cool. Its plan is rambling and low-lying because it is coolest near the earth. In the contrast of light and shade, in its materials, texture and colors and in its austere simplicity, lies its fundamental charm. No architectural type is closer to nature.



An Accessory Building in California
From "The Spanish House in America"

It is with the salient features of this type of house, as it has been introduced into the United States, that Mr. Newcomb deals in this volume. "Any art that is alive," says the author, "responds to the demands and absorbs the character of the race or the age that it serves. The Spanish-Mexican house was eventually carried by the colonizing *conquistadores* into California, Arizona, New Mexico, to the gulf coast of Texas, and into Florida. In each of these colonies, more or less isolated at the time, there was developed a local variant which, as time went on, differed as much from the others as from its prototype in Mexico. Here one sees the time-honored, round, rhythmic Roman forms; there the inevitable influence of Aztec or Pueblo Indian handicraft." The work he explains is "a little handbook to supply the needs of the owner seeking information on Spanish houses and their furnishings, and it may serve at the same time as a general reference book for those who would learn the meaning of this sun-loving architecture." In the drawing of plans the first thing to be considered, he says, is the *patio*, for "a Spanish house without a *patio* is not a Spanish house, at all." Whereas in northern countries the garden surrounds the house, in Mediterranean lands, the house literally surrounds the garden. "It turns a bleak and bare *fachada* (facade) to the street, reserving its greatest interest and most joyous aspects for the *patio*, an outdoor living room." Moslem insistence on privacy for women and family life in general underlies the scheme of the *patio*. The American custom of sitting at the front of the house is often made possible by the construction of an uncovered terrace which leads toward the front. Grass is not indigenous to Spain, hence the use of paving, seen here in gloriously colored tiles. Where flat masses of green were needed, the Moor planted "wandering Jew" or ground ivies and myrtles. Our own profusion of flora has altered this aspect as well, and created new possibilities.

Both plan and building material, he explains, have been altered to meet the exigencies of life in a new world. "American efficiency in room arrangement and ingenuity in the disposition of heating and plumbing apparatus, have led to a type of house plan the comforts of which are nowhere excelled." Building materials, too, have been improved since primitive Spanish colonial times. "He who builds a Spanish house today must erect it with currently used materials and under systems of labor construction available at the present." While *adobe* is still available and much used on the Pacific coast, common brick and varieties of hollow tile often prove more durable and practical elsewhere. Primitive mud plasters and crude lime-and-sand stuccoes are often replaced by varieties of lime and Portland cement stuccoes, with which manufacturers supply directions for achieving Spanish textures and color effects. While in some cases stuccoed frame houses have been built in Spanish style,

HOUSE & GARDEN'S
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EVERY little while a new volume is added to the HOUSE & GARDEN series, which deals with houses, their exteriors and interiors, and their gardens. In this, the latest and by far the most helpful and stimulating of these volumes, there has been collected the very best of the invariably excellent matter which has appeared in HOUSE & GARDEN during the past year or two. It is a volume valuable alike to the architect, the interior decorator and the home owner, as well as to the large number of people casually interested in interior decoration.



SEVEN hundred illustrations deal with every department of the house,—entrance porches, vestibules and halls; reception and living rooms; libraries, dining rooms and kitchens; stairways; bedrooms and bathrooms; verandas and terraces, all these illustrations presenting the most perfectly planned and beautifully arranged examples, the greater part of which are of distinctly moderate cost. Other departments deal with color schemes of which a great many are suggested; with accessories, such as bookcases and built-in bookshelves; lamps and lamp shades; mirrors and other details of furnishing; and one section is given up to illustrations and text which make entirely plain the types of furniture of the different historic periods.

It would be impossible to over-emphasize the value of this work to anyone interested in its subject.

223 pages. 9¾ x 12¾ inches. Price $5.

ROGERS & MANSON COMPANY
383 MADISON AVENUE, NEW YORK

these, due to their thin walls and lack of character, are anything but convincing." One must guard, warns the author, against "pasteboard architecture and stage scenery effects" which ruin the simplicity that gives it charm.

THE SPANISH HOUSE FOR AMERICA; ITS DESIGN, FURNISHING AND GARDEN. By Rexford Newcomb. 164 pp., 6½ x 10 ins. Price $3.50. J. B. Lippincott Company.

EARLY AMERICAN WALL PAINTINGS, 1710 to 1850. By Edward B. Allen. 110 pp., 8½ x 11 ins. Price $7.50. Yale University Press, New Haven.

STUDY of architecture, decoration and furniture involves of course the study of the treatment of those interior walls which create a background for furnishings. Many volumes have been published dealing with the wall treatments in vogue in America during the colonial era and the early federal period, and much has been written regarding the plaster and paneling and the wall paper which were used at various times and in different places. Rather different is the use of painted decoration upon walls. Plaster belongs, of course, to all times and to all peoples, and paneling can be used as often as it is desired to create a new design or repeat a design already used; not so with scenic decoration, a form of ornament which is individual and confined to one place.

In examining this volume one finds with surprise that painted wall decoration was ever used in America to the extent proved by these illustrations. Even today use of this form of wall ornament is by no means common, and yet here are shown examples of wall painting done in various places along the Atlantic seaboard from Maine to Virginia, most numerous in Massachusetts and Connecticut, where many of the examples exist to this day. Through all the English-speaking colonies there journeyed itinerant portrait painters who did not disdain the painting of coaches, taverns, houses, or of the old signs which are sometimes still seen, but their work was naturally comparatively costly and was likely to be done only for the aristocracy,—officers of the crown or wealthy merchants. These painted decorations include the extremely simple as well as the fairly elaborate. The simplest are obviously the result of the use of stencils, while others possess much of the grace and charm of wall paintings by the great French and Italian muralists. A number, in fact, were painted by Michele Felice Corne, an Italian refugee to whom a merchant of Salem gave free passage to America on his ship. The carefully prepared text of the volume is important to those concerned with the history of the decorative arts, while the illustrations possess high value to architects.

AMERICAN GLASS. By Mary Harrod Northend. 209 pp., 6¼ x 9 ins. Price $5. Dodd, Mead & Co., New York.

GREAT is the importance of glass in the modern world, and the history of its making, beginning with the familiar account of its accidental invention as related by Pliny, possesses all the romance of a tale from the Arabian Nights. This well produced and splendidly illustrated volume is the most recent of Miss Northend's many works on antiques and their collecting. She covers quite fully the subject of American glass, reviews its history and the efforts and vicissitudes of early glass makers in America, discusses the various types of glass, and deals with many of the objects into which it is made.



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THE LAW OF ARCHITECTURE AND BUILDING. By Clinton H. Blake, Jr. Second Edition. 349 pp., 5½ x 8¾ ins. Price $5. William T. Comstock Co., New York.

THE organization of an architect's practice involves his being at the same time an artist and a business man. While concerned theoretically wholly or at least chiefly first with matters of designing and planning and then with construction, his dealings with his clients are likely to create certain definite business relations, and further and far more complicated relations are established the moment he enters, as his client's representative, into dealings with contractors and sub-contractors, often with municipalities, and directly or indirectly with manufacturers and with dealers in building materials. Modern conditions have resulted in the development of what might be called "architectural and building law," just as they have led to creating "admiralty law," which has to do with shipping, or "commercial law" which relates to buying and selling, and much effort and litigation would be saved were architects more familiar with the legal aspects of their practice, knowledge not difficult to acquire.

In this volume Mr. Blake, well known for his writings on this and other closely related subjects, discusses the legal side of an architect's activities from the standpoint of a lawyer who has made a successful practice of this department of law. The division of the work is into parts. Part I has to do with "The Architect and the Owner"; Part II with "The Owner and the Contractor"; Part III with "Liens"; Part IV with "The Architect and the Contractor." Each of these parts discusses in several chapters the divisions into which the subject naturally falls. The actual workings of the law are shown by citations of numerous cases in which legal decisions have been rendered. One useful detail is the inclusion in the volume of the forms of contracts and other documents sanctioned by the American Institute of Architects, together with the Institute's "Regulations as to Practice and Charges," its "Canon of Ethics," and its "Circular of Advice." As in the first edition, the work is preceded by an introduction by Aymar Embury II.

THE NEW BOOK OF AMERICAN SHIPS. By Captain Orton P. Jackson, U. S. N., and Colonel Frank E. Evans, U. S. M. C. 428 pp., 7¼ x 9¾ ins. Price $5. F. A. Stokes Company, New York.

THE importance of naval architecture and the constant changes being made in its practice clothe with a high value any work on the subject. This volume, carefully written and lavishly illustrated, covers quite fully the period indicated by the title,—covers rather more, in fact, since it deals not only with ships, in the sense of their being vessels which operate upon the surface of water, but also with vessels which are of a submarine character and other types which operate in the air. Most of the illustrations are from photographs, and the difficulty of securing the photographs and the rare skill with which they have been made can be appreciated only by anyone who has made similar efforts. Twelve of the plates are in color, the work of several well known illustrators, and included here through the courtesy of various publishers. The volume covers the subject well.

A Notable Work on English Architecture



THE most popular and widely used type of architecture in vogue in America today is unquestionably that version of the English Renaissance used during the reigns of George II and George III—or rather the American adaptation of the current English style which is now known as "late Colonial." A correct understanding of the Colonial of this period is best had by studying the prototype from which it was evolved, the work of the great English architects who formulated the style which has ever since been representative of England's best. Mr. H. Avray Tipping gives a lucid and comprehensive history of the work of many famous architects of that time, among them the Adam brothers, who stand out prominently. They were the first to differ from the Palladian pedants and Rococo designers, and the architectural development of the Adam brothers had a profound effect.

THIS is a volume newly added to a monumental work on English architecture. Earlier volumes deal with the Tudor, Elizabethan, William and Mary and Queen Anne types, while in this volume the author sums up the architectural progress which culminated during the reigns of the later Georges. The work is replete with illustrations of exteriors and interiors, of great country houses as well as of manor houses and certain minor buildings which afford precedent for use in America today. It fittingly completes a comprehensive treatment of an important subject. It is a volume which in its usefulness will be of great value to architects whose work involves much use of Georgian design. To the student of English architecture it is necessary to complete his library dealing with design in the Tudor, Elizabethan, William and Mary and Queen Anne periods. It is superbly illustrated.

ENGLISH HOMES; PERIOD VI—VOLUME I

Late Georgian, 1760-1820 *By H. Avray Tipping, M. A., F. S. A.* 402 pp., 10½ x 15¼ ins. Lavishly Illustrated. Price $25

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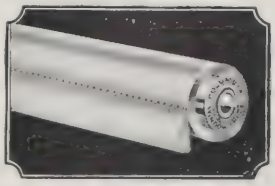
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The ARCHITECTURAL FORUM

VOLUME XLVI — *Established 1892* — NUMBER 4

CONTENTS *for* APRIL 1927

PLATE ILLUSTRATIONS	Architect	Plate
House of Eben S. Draper, Esq., Hopedale, Mass.	*Bigelow & Wadsworth*	65-72
Moorestown Trust Co., Moorestown, N. J.	*Davis, Dunlap & Barney*	73-76
Thirteenth Church of Christ Scientist, Los Angeles	*Allison & Allison*	77-80
The Forum Studies of European Precedents (Plates 65-72)		

LETTERPRESS	Author	Page
Cover Design: Square Before St. Michael's Church, Menton *From a Sketch by P. R. Wilson*		
The Editor's Forum		71
Chenonceaux from the River *From a Pencil Sketch by Eugene F. Kennedy, Jr.*		*Frontispiece*
Sketching in the Chateau Country	*Eugene F. Kennedy, Jr.*	313
Sculpture of a Modern Pediment	*Edwin J. Hipkiss*	319
Dawson Building, New York	*Greville Rickard, Architect*	337
Structural Fire Prevention for Large Garages	*C. Stanley Taylor*	341
1927 Exposition of Architecture and Allied Arts		361

LETTERPRESS	Author	Page
Moorestown Trust Co., Moorestown, N. J.	*Davis, Dunlap & Barney, Architects; Harold Donaldson Eberlein*	363
House of Sherley W. Morgan, Esq., Princeton, N. J.	*Sherley W. Morgan, Architect*	381
F. W. Haemmel House, Port Washington, N. Y.		385
Dr. William A. Mowry House, Madison, Wis.	*Law, Law & Potter, Architects*	387
W. W. Cargill House, Madison, Wis.	*Law, Law & Potter, Architects*	389
Peter A. H. Voorhis House, Yonkers, N. Y.	*G. Howard Chamberlin, Architect*	391
House at Scarsdale, N. Y.	*George Fulton, Jr., Architect*	393
House in Westchester County, N. Y.	*George Fulton, Jr., Architect*	395
Charles H. Cuno House, Meriden, Conn.	*Frank J. Forster, Architect*	397
House of Mrs. Grace M. Burnham, Great Neck, N. Y.	*Frank J. Forster, Architect*	399
Dining Room, Hotel de Chaulnes, Paris	*C. Hamilton Preston*	401

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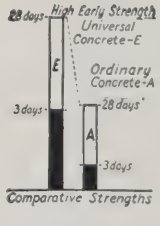
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THE EDITOR'S FORUM

JOHN WALLACE GILLIES

THE death, on January 30, of John Wallace Gillies came as a blow to a wide circle of friends. Few indeed have been the photographers more intimately identified with architecture, "for Gillies was more than a skillful photographer. The art of presenting to a reader the totality of the charm of a piece of architectural creation on a flat sheet of paper was his, and it would be difficult to evaluate the influence of his work upon the development of an appreciation of modern architecture through his photographic studies of the work of the last decade.

"Gillies was always accustomed to stress the importance of technique in his unforgettable photography. Exposure, choice of plate, screen, developer, paper and time, would receive chiefly the credit for results from the picturesque, tall, lean, athletic man, but the files of perfect negatives which were produced by Gillies cannot be explained so easily. John Gillies was essentially the artist. Whether he was tuning up his big Stearns or building a radio, there was always the touch of ecstasy which removed the task from a mechanical feat to an intimate expression of the master craftsman who loved the work of his hands. The absence of color as a medium in his photographic work probably was responsible in a way for his turning his attention to oil painting, in which he found pleasure. As in his photographs, there was a delicacy of detail in high light and a transparency of the shadow which made his work notable."

BIRCH BURDETTE LONG

THE name of Birch Burdette Long, who died on February 28, will ever adorn the roll of America's foremost architectural delineators. Few could exercise the deftness, grace and skill with which he worked, selecting always the best and most architecturally beautiful of whatever properties a building possessed, and creating with the simple combination of paper, pencil, and water colors those enchanting sketches and studies by which he will long be remembered. The architectural profession has suffered of late the loss of many eminent architects and of several who in one way or another have contributed to architecture's portrayal,—to its interpretation to a public which had learned to depend upon such portrayal in forming its taste and its judgment of what architecture produced, and it is with great regret that one enrolls among this number the name of one who by the bold simplicity, unfailing sincerity and charm of his work did so much for the correct understanding and proper appreciation of architecture's function in the modern world. Mr. Long's unfailing services to the architectural profession were not limited to his work as a delineator of beautiful buildings. For many years he has enjoyed an enviable position as one of the leading and most popular members of The Architectural League of New York. His untiring work as a member of the League's annual Architectural Exhibition Committee has been invaluable. His original and unique personality, which endeared him to his many friends and associates, will be greatly missed in all future activities of The Architectural League of New York.

COMPETITION FOR COLLEGE BUILDINGS IN AUSTRALIA

THE Agent General for Western Australia has received a cable from Perth saying that the University of Western Australia is calling for competitive designs for buildings to cost £150,000 sterling. These buildings will include a great hall, offices, etc. Three prizes will be offered of £300, £200 and £100, respectively, the competition closing August 23, 1927. Conditions are obtainable from the Agent General for Western Australia, Savoy House 115 Strand, London, W. C. 2., or from the Australian Trade Commissioner, 44 Whitehall St., New York.

TRAVEL IN ITALY

ANNOUNCEMENT is made of the 1927 Summer School and Tour for American Students, to be conducted by Prof. Paul Valenti, of the School of Architecture of Washington University, St. Louis. For the period from June 18, when the party will leave, until September 20, when it is scheduled to arrive in New York, there is planned a full course of study of art in various cities of Italy. These tours are conducted under the auspices of the Italian government, and every possible advantage is offered to their students. The tour, planned as it is with needs of architectural students almost wholly in mind, is amply deserving of all possible patronage.

A NEW FELLOWSHIP

A TRAVELING FELLOWSHIP in the United States for French architects has been established by the American Institute of Architects under the auspices of the French Ministry of Education, it was announced recently. The annual value of the fellowship, the donor of which is Julian Clarence Levi of New York, is $1,500. The fellowship will continue for an experimental period of three years, and will be administered by a committee of the Institute, consisting of Mr. Levi, Chester Holmes Aldrich, Harvey Wiley Corbett and Lawrence Grant White, all of New York. The Fellow will spend his time in travel and in offices of American architects.

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CHENONCEAUX FROM THE RIVER

FROM A PENCIL SKETCH BY EUGENE F. KENNEDY, JR.

The ARCHITECTURAL FORUM

Volume XLVI APRIL 1927 Number 4

Sketching in the Chateau Country

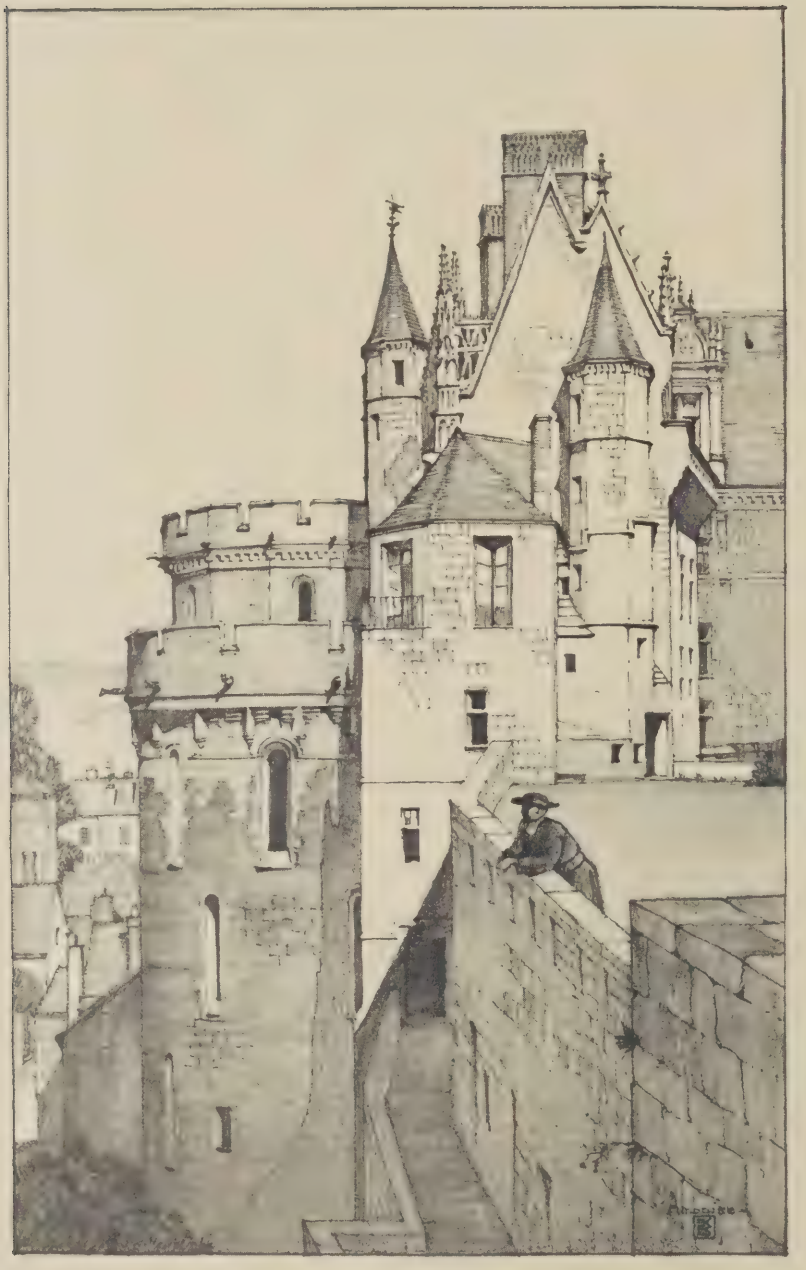
By EUGENE F. KENNEDY, JR.
Rotch Scholar, 1924-26

SOME of us have perhaps taken our first unconscious steps in sketching when at tender ages we created fairy castles upon perfectly clean and unsullied pieces of paper. Even now, though more advanced in years, we never tire of conceiving the same ethereal castles, with perhaps more successful results. It is undeniable that there is something about a castle that must find its way to paper. In the valley of the Loire and in Touraine we can sketch real, material castles much like those we have imagined, and—if anything—more beautiful. The material realities are no different, in another way, from those of day-dream castles, for they too invariably find their way to the sketcher's paper.

One might imagine that sketching in the country of the chateaux would be exactly like sketching in any other part of France, and as a matter of fact the fundamental act of putting lines or washes on paper is quite the same. No especially different method or technique is employed when sketching Azay-le-Rideau than would be used upon a sketch of any similar building anywhere in this world,—unless of course that is the desire of the person making the sketch. And yet those who know the chateaux of the Loire country and Touraine and have sketched there know that there is a great difference. There is—for one thing—a differing atmosphere, a different beauty that is wholly unique to that section of France. There is a variety of subjects surprising to one who might think that one chateau is as like another as are the two proverbial peas in the pod, and while in a remote sense the chateaux are somewhat similar in style and spirit, they are conceived and placed in such a variety of moods that each is an entirely different thing from any of the others. Then, too, the average artist invariably picks out a subject that is more often than not commendable only because it is picturesque. The architect, on the other hand, desires primarily to sketch architecture, but he realizes that architecture often does not compose into nearly as fine a picture as a subject picturesque but architecturally void. He often finds himself in a quandary whether to ignore the architecture and make a pretty picture, or to ignore the picture and record a charming bit of architecture. Imagine the delight of one uninitiated who happens in the chateau country and finds there that sound architecture and the picturesque are one!—that he makes not only a charming picture but portrays some exquisite building with each sketch. There is,—for example,—the Chateau of Blois, built in the center of a town, but remotely situated upon a high plateau, and picturesque enough in its *ensemble* to make anyone sharpen up the pencil and set it working on the paper. Then too, in its component parts it offers a wide variety of styles, making it possible for him who wishes to sketch only the earliest of Gothic to face in a certain direction and do so;—while his companion, who is interested in portraying only the Renaissance, or that intermediate style called *"Francois Premier,"* sits beside him but looks off into another corner, and there finds what he wants.

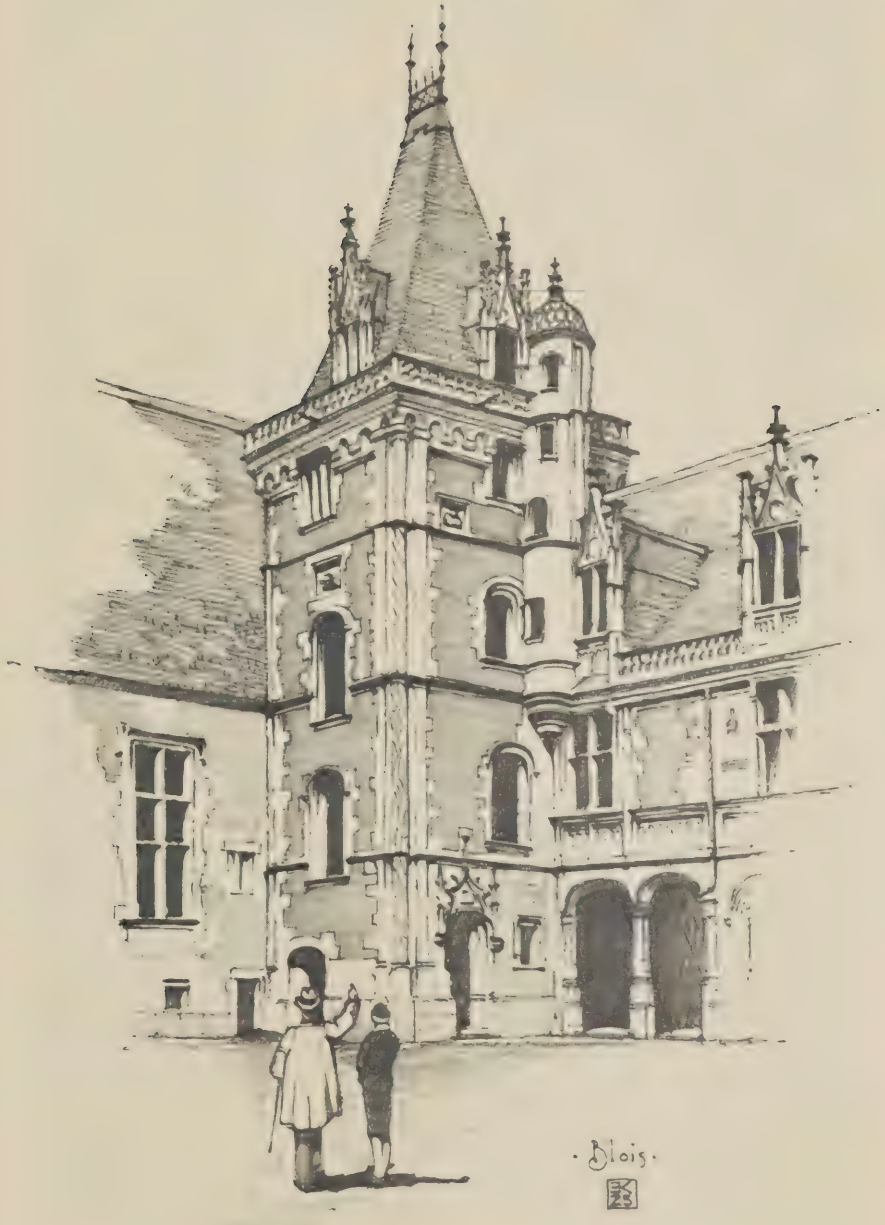
The Chateau of Chambord offers opportunities for numerous compositions, and here we have something that differs from Blois as the day differs from the night, and yet they are built,—for the most part,—in the same general style. We have compositions of many large turrets, with cone-like roofs, crowned with graceful pinnacles and chimneys of every description, all arising from a clear plain devoid of adjacent high shrubbery, yet interesting and varied enough in itself not to require greenery to complete its sketching possibilities. Perhaps after bicycling from Blois to Chambord we are merely content to admire it abstractly, reclining on the broad lawns that surround it, and remarking to ourselves: "Wouldn't that make a dandy sketch," or, "That would make a corking water-color," which is, of course, entirely up to him who fortunately finds himself there. In my own case, I must admit that I made only mental sketches, and found that the more material sketches came more easily after getting rid of the bicycle and reclining on the aforesaid grass!

Chaumont is again different. Perched high and dry upon a hill, in the midst of a vast park, it overlooks the river and valley of the Loire. Unfortunately, if we have time for only one sketch, we must rush frantically from one spot to another trying to decide which composition might be the best. Shall we sketch the entrance portal with its flanking tur-



THE TOWERS OF AMBOISE

FROM A PENCIL SKETCH BY EUGENE F. KENNEDY, JR.



IN THE COURTYARD, BLOIS

FROM A PENCIL SKETCH BY EUGENE F. KENNEDY, JR.

BOSTON PUBLIC



A CORNER OF AZAY-LE-RIDEAU

FROM A PENCIL SKETCH BY EUGENE F. KENNEDY, JR.



LANGEAIS FROM THE HIGHROAD

FROM A PENCIL SKETCH BY EUGENE F. KENNEDY, JR.

rets? Shall we enter the courtyard and choose some fascinating corner, or walk down the hill to do the whole lovely thing from a distance, and have it all?

At Amboise we shall be confronted with the same problem, and here again—as at Chaumont—we find a materialized fairy castle dominating the Loire, but instead of viewing it over a verdant mass of trees, we see it towering above a picturesque sea of quaint houses and colorful tile roofs. Why not sit here and employ the river and bridge in the foreground, keeping the turrets and pinnacles of the chateau hazy in the distance? Or we can climb up to it, and portray it from a corner of the terrace, capturing not only the building but the distant view of the town below, and the river beyond it. Those afraid of trees and shrubs can find marvelous compositions without them, and those who feel that vegetation of some sort is most necessary can wander behind the chateau and look at it through the masses of luxuriant trees and shrubbery which will be found there.

Where is there another subject so unique for the pencil, pen or brush, as the Chateau of Chenonceaux, situated over the swirling river Cher, and sparkling against the verdant masses that line the river banks? Here there is a sketch wherever we look. It would take us days to exhaust the sketching possibilities of this wonderful chateau. Not all of us, unfortunately, are able to stay long enough to even begin to exhaust anything except our supply of pencils and paper, but we can't leave without taking with us at least one sketch of the river swirling under the arches that support the stately walls and steep crested roof. It is one of the most beautiful things in France.

On the way to Azay-le-Rideau, we might stop off at Villandry, which is again different from all the others. This is more formal and symmetrical in appearance, but by no means stiff and unpicturesque. We may sit beyond the outer moat looking into the Court of Honor, where we find a delightful play of light and shade under the arcades of the projecting wings as well as on the dormers and chimneys of its steep roof. It is surrounded by gardens that offer charming compositions in themselves, as well as serving as a unique setting for the chateau. To my mind the most enticing tidbit of all is Azay-le-Rideau, where it is perfectly possible to sketch away pencil after pencil and use quantities of the most expensive water colors. Here is the ideal spot for the confirmed exponent of pencil or brush, or both, to revel in. We might start to sharpen our pencils and see to our palettes before we come upon the chateau, for when we do, we can start immediately upon the first sketch when we arrive at the gate-lodge, a charming little vine-covered house, utterly picturesque and romantic; then, when that is finished, but without disturbing the folding stool, turn and look down the alley that is on axis with the principal entrance, and get the pencil moving again. That completed, a few steps farther down the alley leads us to another no less splendid subject. However, we must save time for the finest treat of all. The paragon of all that is wonderful as a sketching subject is the rear of the chateau. It bathes its walls in the immobile river Indre, so lifeless that it mirrors faultlessly the crenelated walls, turreted corners and steep roofs broken by graceful dormers and chimneys, where the water shows through the numerous lily pads and water reeds that grow in it. We look at it through a screen of slender tree trunks, and it really matters but little where we look, for one point of view is certain to be as wonderful as the next. Besides, we can do more than one! I firmly believe that we can find at Azay-le-Rideau more subjects than at any of the other chateaux. It has a site that is more than charming, and into it is dropped a perfectly ethereal jewel that tempts sketch books and pencils from the most remote of hiding places.

Of course no stack of sketches is complete until it is augmented by at least one drawing of moss-covered ruins. We can find all the ruins we could possibly desire to sketch at Chinon, which is something different again from the castles we have sketched before. So far we have found them all in an excellent state of repair, and wholly habitable,—whether they are inhabited or not. Chinon, on the other hand, is in an excellent state of disrepair, and we may have the unique experience of sketching a massive fireplace bathed in the sun's direct rays and surrounded by carelessly picturesque shrubs and pieces of dethroned walls and vaulting. Here and there an ancient crumbling tower greets us over a piece of ruined wall or through an emerald screen of trees, just waiting to be drawn, and seemingly there for no other purpose. What more could be asked for by him, however particular, who prefers ruins?

Another tempting morsel is Langeais, a type earlier than the others, save Chinon. It is chiefly noted for the remarkable furnishings of its interior, but it is situated in a totally different and highly picturesque spot in the center of a town. Narrow, crooked streets skirt its battlemented walls, while ancient timbered houses lean toward it, seemingly for support. Surely it is a subject to delight the hearts of those searching for the picturesque with a little architecture thrown in. We find myriads of different compositions, looking down this or that narrow, cobble-stoned street at the fortress-like entrance or at one side. It was made to be sketched.

All these are but a few of many. There is yet Luynes, which we might "do" from the bottom of the hill, rather than climb the 150 or more steps that lead to the building and sap the ambition of even the most enthusiastic sketchers. There is the resplendent Chateau of Usse, and the more or less ruined Loches, not to mention many others, which are more than sketchable. Indeed, the chateau country contributes more than its share of subjects to fill the sketchbook. The natural beauty and contentment of the country itself invest everything with a beauty additional to what it already possesses. Everything seems made for no purpose other than sketching. It is indeed the happy hunting ground of the artist.

The Sculpture of a Modern Pediment

By EDWIN J. HIPKISS

ANYONE who has had occasion to actually draw a design for a pediment enriched with sculpture must have felt the inadequacy of his "indication" even when filled with assurance as to a generally promising treatment. It is here that generalities, even of the able designer, must be sifted down to the actualities of form, of balance, of light and shade, at last, by the talent and two-handed strength of the sculptor working in collaboration with him. The New York County Court House, lately completed in lower New York, offered such an opportunity to a sculptor, and the accompanying illustrations show an interesting, and, we think, an excellent work of its kind;—a sculptural design which follows knowingly the classical tradition of the building, its present-day purpose, and its place. The sculptor has rightly had his backward glance at sculptured pediments of the past, but here is a modern version, the more satisfying in that it fits into a scheme of things larger than the individual and much larger than the megalomania of those detached and mystifying performances so plentifully and so unfortunately sprinkled over the field of current art.

As is well known, the New York County Court House design was won in competition by Guy Lowell many years ago, and construction on a huge scale has been carried on during the past 12 years. The completed portico of the building has across its front ten columns of the Corinthian order, 60 feet in height, surmounted by a pediment 104 feet wide. The architect's scheme called for sculpture in high relief to fill the tympanum and three figures in the round to stand on the acroteria. In 1924 Frederick W. Allen was commissioned as sculptor for this part of the work, and with a modern version of traditional figures in mind to represent the ideals to which courts of justice are dedicated, Mr. Allen has found his own arrangement after three years of study and development worked out in models of clay and plaster. A sense of design in the large has governed all his study; in his search for pose and action through the use of living models, he has referred con-







Sculptured Pediment, New York County Court House

Frederick W. Allen, Sculptor; Guy Lowell, Architect

stantly to the area as a whole, or, obviously, the filling of his triangular space with an ordered pattern.

The figures in the tympanum, it may be seen, are placed in five groups which are, however, bound together through a skillful interrelation of action and accessories, and the resultant combination of dignity and grace is no small achievement in itself. It will be noticed that those ever-difficult areas in the acute angles have been filled with a seeming ease which leads one to make comparisons with classical or other examples and to find here a unity of scale in the figures, a sense of balance and a lack of either crowding or sparseness throughout which would seem to mark this work as one of outstanding merit. On the structural side there are certain factors to be noted in order to better understand both the sculptor's problem and his achievement. For instance, in the matter of relief, the granite blocks of the tympanum left "in the rough" permitted but a maximum cutting depth of 15 inches. Furthermore, the huge scale was to be visualized, for this pediment, 104 feet wide, stands 80 feet above the street level. Mr. Allen's studies were carried forward in his studio on models of the portico at a reduced scale, and eventually the actual cutting at the building was done from plaster sections made at full size. In this the sculptor faced the hard exigencies of modern granite cutting, the cause of much difficulty to sculptors.

According to the sculptor's intent, we are confronted with the figure of Justice, assisted by Courage and Wisdom, in the central dominating group. The ends are filled with seated or kneeling figures as guardians of the records, and between these on the two sides are groups representing the opposed forces of Good and Evil. The Philosopher, the Bearer of the Robes, and Youth Bearing Garlands are balanced by three figures symbolical of corruption. On the acroteria above stand figures representing the Law, Truth, and Equity. The artist has given us a carefully studied scheme in constructive design, and something remains for our imaginative perceptions to supply. We are reminded that John Singer Sargent once turned aside an inquiry that may have suggested to him a too literal point of view, when he remarked laughingly of one of his decorative panels that it represented "just some blokes dancing." You may take it as you like it!

To appraise Mr. Allen's sculptured pediment in its degree of excellence need not be undertaken hurriedly, for the years will tell. But it is to the sculptor's honor that his skill has been wedded fittingly to the demands of a scheme wherein architecture and sculpture supplement each other for a greater honor, which is the serving of Justice in a great community.



Central Dominating Group, Pediment, New York County Court House

Frederick W. Allen, Sculptor; Guy Lowell, Architect

Photos. Thomas Ellison

Plans on Back

ENTRANCE FRONT, HOUSE OF EBEN S. DRAPER, ESQ., HOPEDALE, MASS.

BIGELOW & WADSWORTH, ARCHITECTS



SECOND FLOOR



FIRST FLOOR



MEZZANINE

PLANS, HOUSE OF EBEN S. DRAPER, ESQ., HOPEDALE, MASS.

BIGELOW & WADSWORTH, ARCHITECTS



Section on Back

VIEW FROM LAWN, HOUSE OF EBEN S. DRAPER, ESQ., HOPEDALE, MASS.

BIGELOW & WADSWORTH, ARCHITECTS



SECTIONAL VIEW, HOUSE OF EBEN S. DRAPER, ESQ., HOPEDALE, MASS,

BIGELOW & WADSWORTH, ARCHITECTS



GARDEN FRONT, HOUSE OF EBEN S. DRAPER, ESQ., HOPEDALE, MASS.
BIGELOW & WADSWORTH, ARCHITECTS



MAIN ENTRANCE, HOUSE OF EBEN S. DRAPER, ESQ., HOPEDALE, MASS.
BIGELOW & WADSWORTH, ARCHITECTS



SERVICE WING, HOUSE OF EBEN S. DRAPER, ESQ., HOPEDALE, MASS.
BIGELOW & WADSWORTH, ARCHITECTS





DETAILS, HOUSE OF EBEN S. DRAPER, ESQ., HOPEDALE, MASS.
BIGELOW & WADSWORTH, ARCHITECTS



LIVING ROOM



LIBRARY

HOUSE OF EBEN S. DRAPER, ESQ., HOPEDALE, MASS.

BIGELOW & WADSWORTH, ARCHITECTS



DINING ROOM



LIVING ROOM

HOUSE OF EBEN S. DRAPER, ESQ., HOPEDALE, MASS.

BIGELOW & WADSWORTH, ARCHITECTS

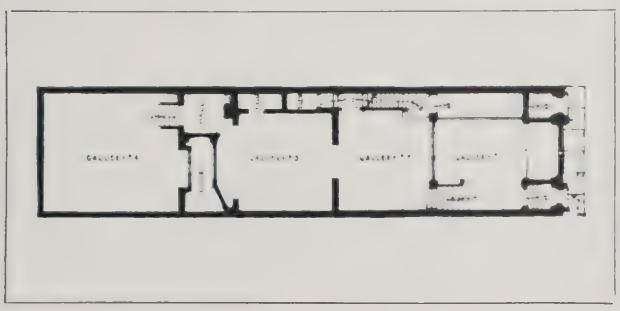
Dawson Building, New York

GREVILLE RICKARD, *Architect*

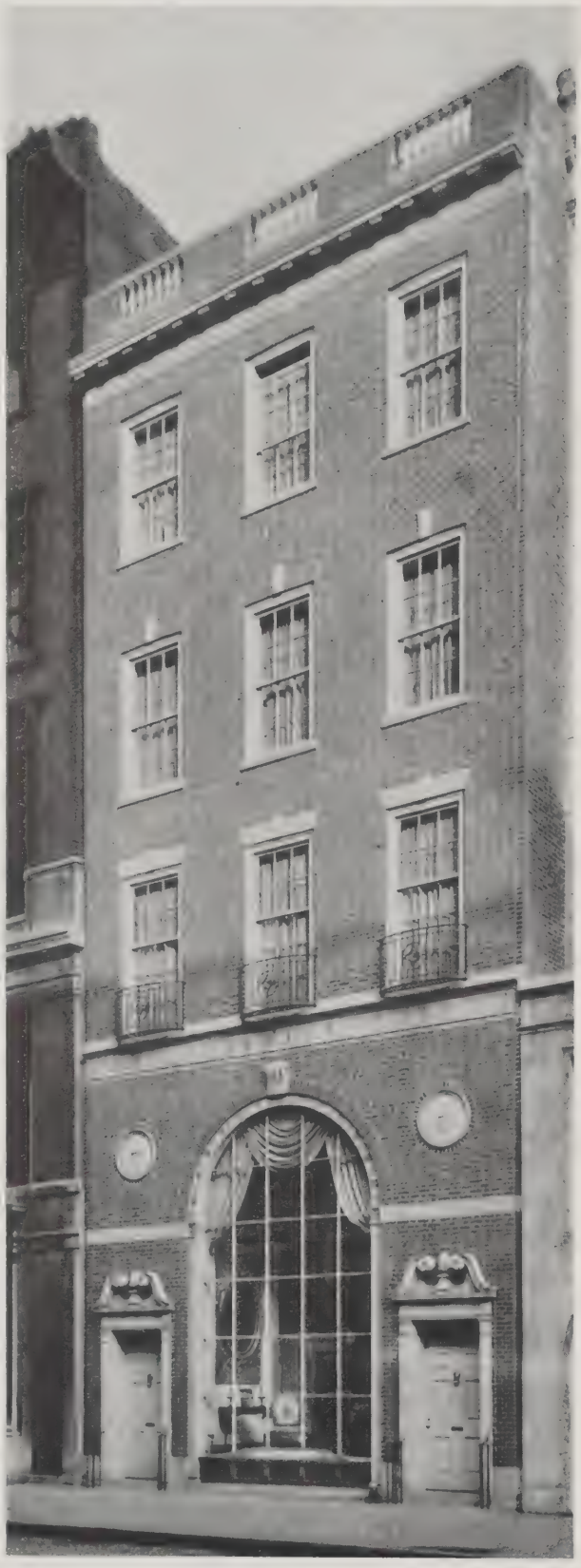
THE Dawson Building, at 19 East 60th Street, New York, was awarded by the unanimous vote of the committee the gold medal or first prize given by the Fifth Avenue Association for the best altered building erected during the year 1926. It was the opinion that this building presented an unusual example of charming and effective alteration work. This award, made every year, is arrived at after a thorough inspection by the committee, consisting of three members of the Fifth Avenue Association and three architects, of all alteration work done during the current year in the section of New York extending from Washington Square to 110th Street, from Park Avenue to Sixth Avenue.

An unusual opportunity for an effective treatment was afforded in this instance, due to the fact that the owner appreciated the value in his particular kind of business, the selling of antiques, of an architectural setting. It is here obtained by a tall, uninterrupted show window, letting in a flood of light and producing a feeling of liberality and spaciousness that is pleasing to the customer. This would have been lost had he striven for the greatest amount of floor area possible by placing a mezzanine gallery across the front of the building, as is so often done. This height was made possible by dropping the forward part of the ground floor from the previous level of about 7 feet above the sidewalk to a level of 2 feet. The basement is reached by a service entrance at the right of the show window, and the necessary headroom is obtained by a gallery built up at the side at the level of the original first floor. A new gallery was also built at the rear of the building on the rear lot line. The second floor is used for the display of antiques and for the office, and the upper floors consist of two apartments, one occupied by the owner. It is a highly successful alteration.

The facade of this building was originally an old brownstone front, set about 4 feet, 6 inches back of the building line, with a long flight of steps leading up to the entrance. This was entirely removed and a new facade erected on the building line, extending each of the upper floors out far enough to meet it. The facade is in the Georgian style.



First Floor



Dawson Building, New York



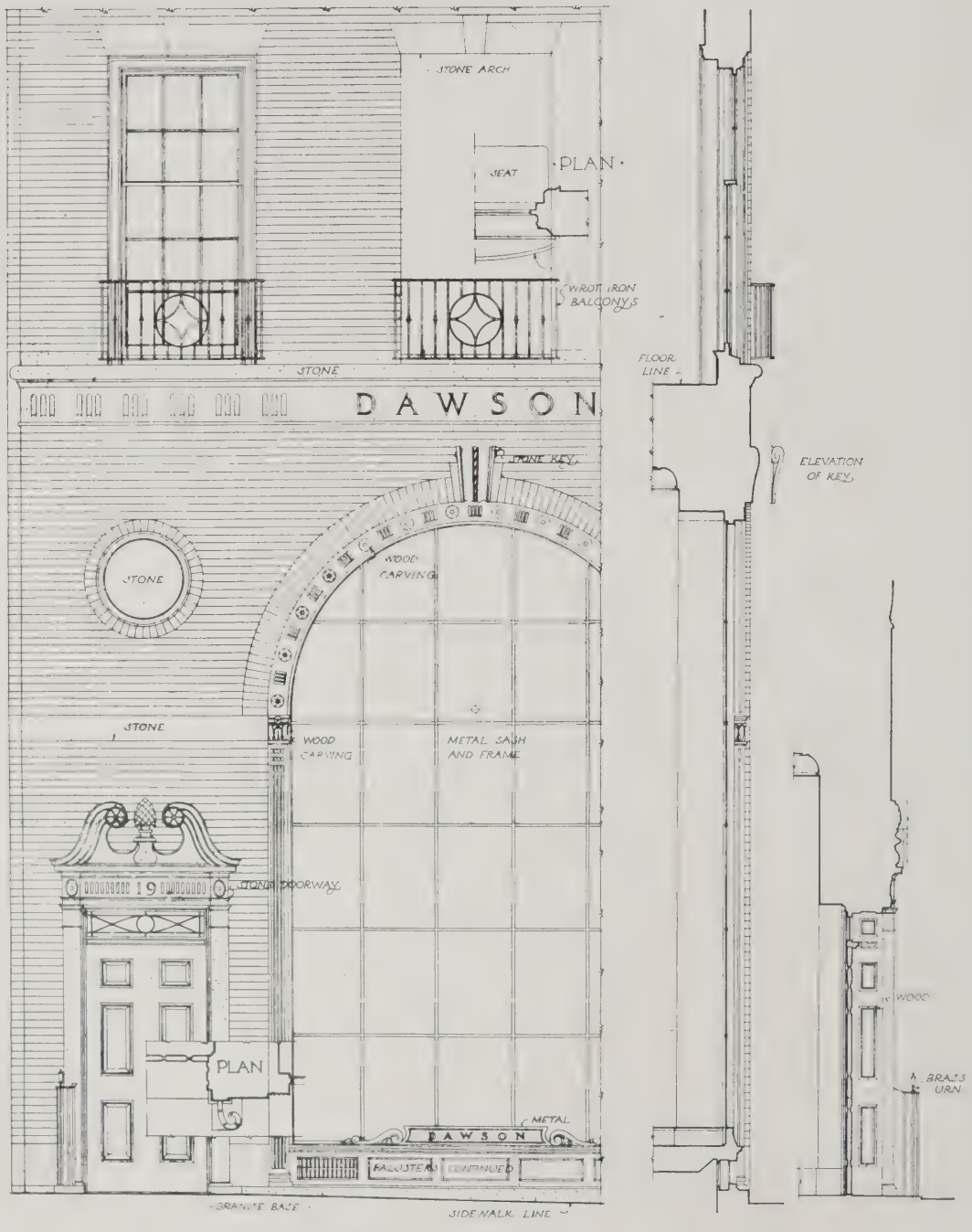
Photos. P. A. Nyholm

DETAIL, DAWSON BUILDING, NEW YORK
GREVILLE RICKARD, ARCHITECT



Detail on Back

LOWER HALF OF FACADE, DAWSON BUILDING, NEW YORK
GREVILLE RICKARD, ARCHITECT



DETAIL OF STORE FRONT

GREVILLE RICKARD, ARCHITECT NEW YORK CITY

SCALE 0 5 10 15 IN FEET

APR. 1927

NO. 26

ENGINEERING DEPARTMENT

Structural Fire Prevention for Large Garages

By C. STANLEY TAYLOR

ARCHITECTS who are working on the plans of large garage buildings will not, as a rule, fail to give serious consideration to the class of problems suggested by the title of this article. At the same time, there are so many variations in building code and in insurance requirements, and so many short cuts through which correct planning and equipment results may be achieved without a great expenditure of the architect's time, that a brief outline of some of these points may be found of value. While this article will deal primarily with the problems of insurance engineering as applied to garage design, it will also contain here and there a suggestion on plan or construction which has been gained from some practical source and is thrown in for good measure. Some important details are suggested.

Before entering into a discussion of detailed insurance engineering as applied to the planning of garage buildings, it may be well to review the correct method of procedure on the part of the architect through which he may obtain expert advice on this subject at no cost to himself or to the owner. Having important fire-preventive precautions embodied in plans and specifications, there need be no further sense of responsibility in this connection, and the architect may feel that his service has been made even more valuable than usual from the owner's point of view. In this connection, there is available to the architect a form of service which should always be utilized wherever possible. This is the advisory service which is maintained by fire insurance brokers, agents or companies, known as "insurance engineering" and offering expert knowledge not only of local fire insurance and code requirements but of rating methods under which the establishment of certain safeguards in the construction and equipment of the building will earn insurance rate reductions which may considerably decrease the annual premiums, being in the end highly profitable.

Insurance engineering service, as rendered by the better insurance brokerage organizations, is handled through a special department without cost or obligation to the owner except requiring placing the insurance business through the particular organization which renders this service. From the point of view of the architect the procedure is to find out who handles the owner's fire insurance, and if that organization maintains such a service, it can be brought into advisory coöperation during the preparation of plans. Otherwise the architect can recommend to the owner the selection of an insurance agent who will render such service along the lines already described. This service can now be had anywhere.

Here is a fund of wide experience which the architect can employ without cost to himself and to the mutual benefit of all parties concerned. Tentative plans and specifications are first drawn up for the building, and these are submitted to the insurance engineer who will obtain the approximate rating and will submit a schedule of recommendations covering fire areas, exterior opening protection, fire doors, and similar precautionary structural measures which will earn rate reductions and render the building much safer from fire hazards. It is a well established fact that the indirect loss from fires in commercial or service buildings of any type may often be greater than the direct loss. While the direct loss is covered by insurance, the indirect loss, which means suspension of business, loss of trade, etc., is never compensated for, and it is part of the architect's responsibility to the owner to introduce every practical means of preventing such losses. In many instances this can be done thoroughly only by correct planning and construction, and structural conditions involving hazards are often almost impossible to cure at a later date, and then at considerable cost.

If insurance engineering service is not easily available under the plan here set forth, it is quite possible for the architect to obtain a copy of local insurance rating schedules which will furnish suggestions covering various risks against which the plans and specifications should guard. In addition to this insurance engineering phase of the problem, there must always be considered the requirements of local building codes and fire regulations. These can be readily ascertained through the proper city or town departments, and before the building is planned a complete schedule of such requirements should be had as part of a preliminary planning analysis to give some idea of the type of requirements which are often mandatory by local regulations, or advisable because of local insurance ratings. There will be suggested in these paragraphs a few examples or factors which must be considered during the early stages of planning and specification writing for a garage building.

The first basic requirement which is to be found in almost every community where a public garage would probably be erected is the provision of fire

walls to restrict the so-called fire areas of the building. The maximum unit of space permissible in a fire area varies in different localities, and this point should be determined before plans are developed. For the same purpose of protection, fire walls are called for around all vertical openings such as elevators, ramps, and stair shafts. These fire walls are to be of approved masonry construction, and all openings in them must be protected with automatic fire doors and fire shutters, so that flames may be absolutely confined to the area of origination and prevented from spreading from floor to floor. In the case of buildings constructed with a combination of ramp and staggered floors, a fire shutter is usually required at each point where the ramp passes through the wall. All door openings in elevator shafts must be protected with fire doors at each floor entrance. In most large communities a special code requirement calls for stairways located in fireproof shafts and placed in such a manner that no point in the garage is distant more than 100 feet from such means of escape in case of fire. Entrances to these smoke towers must, of course, be protected with fire doors, which are at all times kept closed through automatic control. The general construction of garage buildings is usually controlled by local codes and calls for masonry construction of approved thickness and type both for floors and walls. The structural members must be adequately fireproofed to prevent any danger of collapse due to failure of a member under conditions of temperature which might occur.

The inclusion of automatic sprinkler installation in garages is often optional from the viewpoint of the owner, although in some communities automatic sprinkler installation is mandatory under building conditions. As a rule such an installation materially reduces the insurance rating, and occasionally a compromise is effected by the installation of automatic sprinklers at points of special fire hazard. Fire-extinguishing and fire-fighting apparatus should be provided at various convenient points, and such provision may even be mandatory under local regulations. This equipment will also include installing necessary tanks and standpipes, while, because of the nature of grease and oil hazards, sand boxes are also requisite forms of fire-extinguishing equipment. At points where an exterior fire hazard, such as old wooden buildings from which fire might be communicated to the garage, exists, it is good practice and sometimes mandatory (especially from the insurance rating viewpoint) to install wire glass windows or fire shutters to prevent the communication of fire through such exterior openings. Importance of all of these preventive measures can



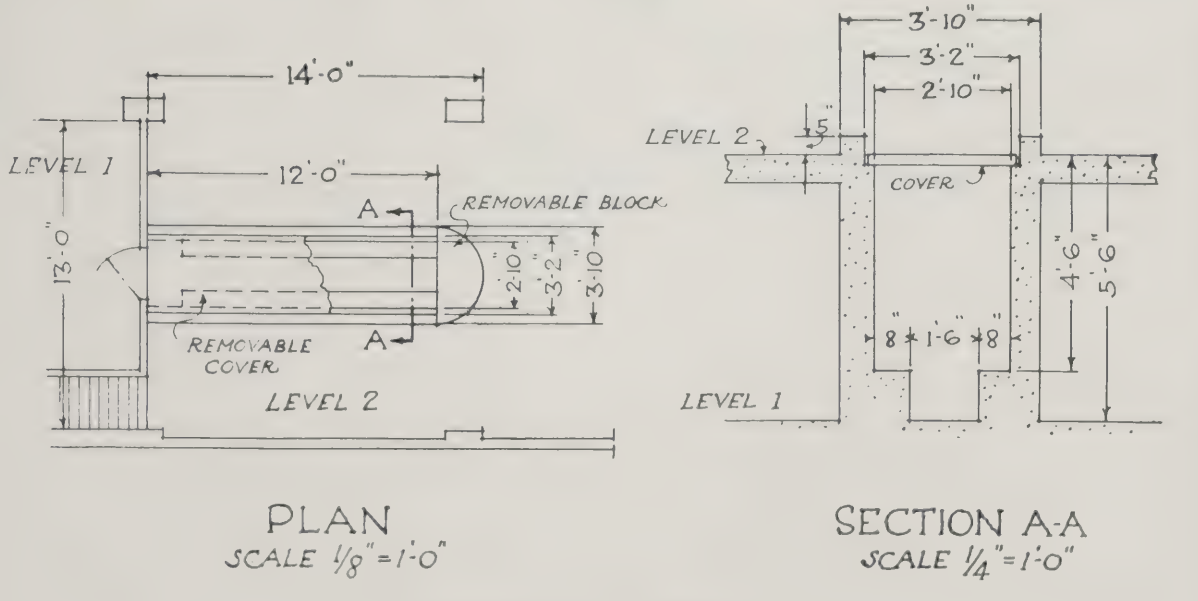
Evening News Garage, Detroit
Albert Kahn, Inc., Architects

easily be determined by an experienced insurance engineer, who will set them up in the form of a schedule for the guidance of the architect. A point of special fire hazard in the average garage building is the grease pit, which if sunk into the floor in the ordinary manner will form a dangerous well for the collection of inflammable gases. For this reason such grease pits are prohibited in some cities, greasing racks being used in their stead. It may be noted, however, that the use of the common elevated greasing rack is often impractical because of the low headroom which is now almost standard in multi-floor garage design. When the ramp system, which involves staggered floor levels, is employed, it is quite possible to solve this problem in a very satisfactory manner because car spaces can be arranged against the dividing wall on the second level. Beneath this space, which constitutes the greasing rack, there is placed a pit arranged with a communicating door giving direct access to the bottom of the pit on the next lower level. This is not only a more convenient layout, but provides sufficient natural ventilation to offset the usual fire hazard. There will be found upon this page a sketch illustrating this type of grease pit, and it may be noted that the removable pit cover permits the use of the floor space for car storage when it is not required for service work.

Another fire hazard of the average garage is to be found in greasy rags and dirt which often accumulate in corners unless proper provisions are made for their immediate disposal. An efficiently designed garage will incorporate the feature of dirt chutes into which such oily waste material may be thrown and carried to fireproof containers in the basement. This is a minor but important installation, which the architect should not overlook. A typical detail which is also often overlooked by architects is the provision of proper boiler room exits, which almost always earn a cut in the insurance rate. In every case at least one exit should be provided from the boiler room directly to the street. This important question of providing structural safeguards against fire hazards is one which should receive serious consideration by the architect, particularly in view of the fact that information regarding such safeguards is so readily obtainable.

In studying the plans of various garages, there have been noted a few points which may prove to be of importance when plans for new buildings are being drawn. These points are presented at random and may relate to plan, design or equipment. The most favored type of construction, and probably the most economical type, is of reinforced concrete throughout and designed to carry live loads according to various local requirements. The United States Department of Commerce has recently published a booklet on live load ratings for multi-floor garages, which contains the findings of a survey by the Building Code Committee. This report brings out a surprising number of variations in live load factors for garage floors, as specified by the building codes of various cities. This table (page 344) gives the requirements for garage floor loads in 90 cities.

The figures as given here take into consideration all types of garages, and the average for all the cities is 126 pounds per square foot. The consensus of opinion of experts in garage planning seems to be that the live load factor for a garage which houses passenger cars and light trucks should be about 125 pounds per square foot, while for heavy trucks the live floor load should be about 150 pounds per square foot. Calculations should be made on about this basis.



A Practical Type of Greasing Pit

No. of Cities	Live Load Lbs. per sq. ft.
1	50
2	75
5	80
1	85
24	100
8	120
11	125
1	130
1	145
30	150
2	175
3	200
1	250

The question of headroom is important in developing structural plans and is thus answered by experts in garage designing: The minimum clear headroom necessary for the different types of garages is (1) passenger car storage, 8 feet; (2) truck storage, 13½ feet; (3) sales and service space, 12 feet. Allowing 2 feet for the thickness of the floor, depth of beams, pipe installations, etc., the figures for story heights, from finished floor to finished floor, will be obtained by adding 2 feet to each of the figures preceding. It is obvious that if these facts are kept in mind when designing the building a saving in construction cost may result.

Another point of economy in planning is the possibility of using the garage roof for parking purposes, and it would seem that in most instances this should be done either for emergency purposes or to increase the useful and revenue-producing space in the building. An investigation recently made by a large garage-designing organization brought out several interesting details of the construction of garage roofs of this kind. One roof was built of tee-beam construction with 2½-inch slab. Temperature bars were put in the concrete beams and reinforcing mesh in the concrete slab, which was then treated with three coats of waterproofing, coated with moist neat cement, and then a concrete top of 1-inch mortar, composed of one part cement and one part sand. This roof has been found to be absolutely water-tight. One of the foremost construction companies in the East suggested the use of a 2½-inch or 3-inch concrete slab over the usual five-ply waterproofing felt roof covering. The slab should be constructed in sections not exceeding 5 feet in each direction and separated from one another and from the parapet wall by ¼-inch joints filled with suitable material.

A suggestion by a structural engineer who has had a great deal of experience with garages is valuable. After the roof slabs are put in they are covered with a three-ply membrane waterproofing. Over this is placed 2 inches of cinder concrete, and the roof is then finished with 1 inch of concrete with integral waterproofing; 2-inch expansion joints should be provided around the parapet wall and along lines dividing the roof into sections not to exceed 100 by 100 feet. These joints should be filled.

Another suggestion is made as probably the best. It may be noted in passing that while reinforced concrete construction is found desirable in many sections of the country, there are occasionally district conditions or other reasons why steel construction is to be preferred. For instance, there is always the consideration of the possible future use of a building for purposes other than that of a garage. In other words, when the success of the garage project is somewhat problematical or the trend of commercial activity in the particular district may point to an ultimate possibility of changing the nature of occupancy of the building, it is wise to use steel construction because remodeling then is simplified. Again, there are times when architectural design of the exterior becomes of particular importance, and it may be of a type which can better be carried out with steel construction and curtain walls. Another fact worth investigating is that in certain cities contractors bid much more favorably on steel construction for use in garage buildings.

Two other matters which the architect must watch carefully in developing his plans include special building and safety code requirements; the provision of proper floor drainage; careful designing of a proper ventilating system; and the installation of a supply system which will supply gasolene outlets on all floors. There are various special air-pressure, hydraulic, and power delivery systems for this purpose. Still another factor which primarily affects planning and introduces the element of economy in both construction and operation has to do with the proper arrangement of garage control facilities. The plan should primarily be based on a one-entrance system, and should be arranged in accordance with the logical sequence of operation and business administration as defined by the nature of the individual garage business to be housed.

The architect will find the designing of large public garages to be a much more interesting problem than might at first seem to be the case. On the other hand, it is less complicated than might be expected, because of the valuable types of advisory service which are available. It is obvious that with parking conditions growing constantly more difficult and with the vast increase in the use of automobiles, the garage problem is becoming vital to every community and every district, and for this reason every architect should give study to this question, because at any time such a commission may come to him.

There is another interesting phase of this subject which should be pointed out. Hotel owners, particularly those who are planning apartment hotels, realize that a garage structure may be an important adjunct to the property, and for this reason large garages are included in the plans of many such buildings. Similarly, department store and office building owners are giving more thought to this problem, so that in addition to the individual garage structure type, there are possible many interesting combinations which might involve such provision.

The Forum Studies of European Precedents

FRENCH AND ITALIAN COURTYARDS



COURTYARD, MUNICIPAL PALACE, VITERBO

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Photos. Paul J. Weber

DETAIL, COURTYARD, MUNICIPAL PALACE, VITERBO

The Forum Studies of European Precedents; Plate 66



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COURTYARD, SPOLETO

The Forum Studies of European Precedents; Plate 67



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SECOND COURT, CHATEAU CLERMONT, AT TONNERRE

The Forum Studies of European Precedents; Plate 68



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COURTYARD, OLD MONASTERY, OUTSIDE PORTA ROMANA, LICNA

The Forum Studies of European Precedents; Plate 69



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COURTYARD AT RIMINI

The Forum Studies of European Precedents, Plate 70



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COURTYARD, ST. PETER'S

The Forum Studies of European Precedents; Plate 71



© *The Architectural Forum*

COURTYARD, PICCOLOMINI PALACE

The Forum Studies of European Precedents; Plate 72

1927 Exposition of Architecture and Allied Arts

GRAND CENTRAL PALACE, NEW YORK

ONCE again the Architectural League of New York combined its annual exhibition, which this year was its forty-second, with an exposition of the allied arts at the Grand Central Palace. A great divergence of opinion exists among the architects of New York in regard to the advisability, advantage and propriety of thus merging an exhibition of architecture, sculpture and mural painting with a display of household decoration, furnishing, and equipment, together with building materials of every sort. There seems to be no definite, satisfactory or conclusive answer to satisfy those members of the profession who would prefer to see a separate and smaller exhibition restricted entirely to the three arts. Considering the general public and its recognized lack of knowledge and appreciation of architecture and its two sister arts, it might seem advantageous to combine them with the allied crafts and building materials in one exhibition in order to elicit a greater interest on the part of the public in architecture itself. To present the attitude of the Architectural League toward such a joint exhibition as has just ended in New York, it seems appropriate to quote from the foreword to this year's exhibition catalog by J. Monroe Hewlett, once president, and member of the exhibition committee.

"To the many arts and crafts allied with it, architecture should bring increased opportunities and broadened standards. Conversely, painting, sculpture and all the forms of imaginative craftsmanship should bring to architecture the sympathetic human qualities upon which its spiritual influence depends. These results can be accomplished only by simplifying, harmonizing processes to which the other arts must subject themselves in order to come into a proper relation to architecture. Such processes have been sadly interrupted during recent centuries. Excessive specialization in education and practice has gone far in destroying the mutual understanding and sympathy essential to intelligent collaboration among designers. Our greatest artistic problem today is the re-creation of a point of view, the restoration of the unity of all the arts of design.

"To many New Yorkers the Architectural League exhibition is the most interesting exhibition of the year because it is at once the most varied in its exhibits and the most unified in its aim. However great the variety of the designs and objects shown, however marked the differences in the theory and practice of the designers, there is evident in this exhibition the subordination of these differences to a common purpose which is the enrichment of our architecture and, through that, the enrichment of our life. For forty-two years these exhibitions have recorded the growth of all the arts that minister to architectural progress. As the years have advanced they have become less and less mere exhibitions of architectural designs and more and more records of performance in all the branches of art which, co-ordinated, become architecture. They have mirrored the succession of architectural 'styles' from the remote to the recent past, and if today there is



Entrance to the Long Gallery



Corridor to the Grand Salon

a prevailing sentiment among the great body of artists that the time has come to look forward rather than back, to embody in our design less of the dead past and more of the living present, these League exhibitions should thereby acquire increased significance; and through them the designers, in whatever medium they render their designs, should come nearer and nearer to an answer to the age-old question, 'what is the relation of my craft to all the crafts of which architecture is the unified expression?' "

Howard Greenley again acted as designer of the architectural setting of the exhibition, successfully transforming the vast open floor spaces and bleak interior architecture of the Grand Central Palace into a series of attractive halls, galleries and corridors. On the walls of this transformed interior were hung the diversified and interesting collection of architectural drawings, renderings, plans, photographs, mural paintings, and wall decorations of many kinds.

It was entirely fitting and appropriate that the Architectural League medal of honor in architecture should be awarded to Ralph T. Walker, and McKenzie, Voorhees & Gmelin, of which firm he is a member, in recognition of their genius and ability in designing the Barclay-Vesey Telephone Building in New York. The medal of honor in painting was awarded to J. Monroe Hewlett, architect and mural painter, for his two cartoons depicting "The Discovery of the Connecticut Valley." The medal of honor in sculpture was awarded to C. Paul Jennewein for his remarkable adaptation of the polychrome sculpture of the classic period to the requirements of modern monumental architecture as illustrated by the pediment figures and decorative details conceived and executed by him for the Philadelphia Museum of Fine Arts. For the best exhibit of landscape designs, the medal of honor was awarded to Bremer W. Pond. For the two very beautiful plaques showing an appreciation of both ancient and modern ceramic art, the medal of honor in design and craftsmanship in native industrial art was awarded to Hunt Diederich. The Michael Friedsam medal was awarded to Frederic Carder of Corning, N. Y., who for many years has been associated with the Corning Glass Works. This medal is awarded annually to an individual who has contributed in a marked degree toward the development of art in industry. For his figure entitled "Bird Bath," Olympio Brindesi was awarded the Avery Prize for Sculpture. This prize, the value of which is $50, is awarded annually to a sculptor under 30 years of age and is given for small rather than large pieces of work. The silver medal for general architectural work was awarded to Bertram G. Goodhue, deceased, and Bertram G. Goodhue Associates for a series of exhibits of work recently completed by this firm. The silver medal for intimate architectural work was awarded to Frank J. Forster on account of the house he designed for Mr. Karl Keffer at Scarsdale, N. Y. Honorable mention for intimate architectural work was awarded to Marion S. Wyeth and Frederick R. King for the house designed by them for Mr. Harris Hammond at Bordentown, N. J.

In conclusion, as one of the severest critics of this type of combined exposition of architecture and allied arts in a sort of "art and trade fair," Forbes Watson, editor of *The Arts* and one of the leading critics in this country, admits in speaking of the recent exposition, "when we come to reproductions of the works of the architects themselves, to the charming, domestic architecture and the exciting skyscrapers, the unhurried visitor can discover reasons enough why architecture is so often said to be America's most triumphant achievement in the arts. If this is so it is because architecture is meeting the vital needs of the people. Certainly a great deal of interest is being shown today in everything connected with it, and the crowds following architecture differ from those following painting and sculpture."



The Main Gallery

The Moorestown Trust Company, Moorestown, N. J.

By HAROLD DONALDSON EBERLEIN

THE casual observer, passing through the small towns of the Eastern and Middle Atlantic states, might be inclined to suppose that all the recent bank buildings to be found there had been patterned with scrupulous fidelity after one or two universally accepted models. He might also reasonably conclude that these standard models had been derived from the designs of several city banks by a process of compression or distillation, or something of the sort; likewise, that all that was needed to accommodate them to their immediate local requirements was judicious expansion or contraction, according to the dimensions of each particular site and the cubic space called for by the bank officials. Of course there are notable exceptions to this monotonous sameness in small bank architecture but, notwithstanding this occasional—and very welcome—relief, there is undeniably enough likeness among buildings of this class to justify the ridicule poked at them by a supposititious Japanese student, a little more than a year ago in the pages of one of our architectural journals. "'Arch's Handy Designer,' showing all standardization plans for buildings mostly alike," a compilation urgently recommended in the satire, might well have been the parent of a numerous progeny. The absurd uniformity of this decent but dull "job lot" of small town banks seems to point either to poverty of invention on the part of the architects who fathered them, or to poverty of imagination on the part of bank officials,—or perhaps to both, for at times both seem equally to blame.

When we meet with a small bank building designed to accord with the character of the community it serves rather than in perfunctory compliance with a stereotyped and hackneyed convention, it is worth examining for the factors that give it its distinction and make it stand out from among its fellows. Moorestown is a long-established, quiet country town, strongly entrenched in its own local traditions. Its old houses, set in spacious grounds, are for the most part of Georgian or Colonial derivation and affinities. The prevalent atmosphere of the



Preliminary Study, Moorestown Trust Co., Moorestown, N. J.
Davis, Dunlap & Barney, Architects

place, besides taking its tone from its gracious architectural sobriety and amplitude, is distinctly domestic and distinctly rural. A bank building reminiscent of city styles, and appearing indeed to be but a city bank in small, would have been manifestly at variance with the spirit of the town. It was, therefore, plainly in order to catch and incorporate as far as possible the domestic breadth and simplicity of the environment and to preserve the intimate domestic quality that dominate the neighborhood. This has been done.

How far the architects have succeeded in doing this may be judged from these illustrations. One feature that has appreciably contributed to the desired result is the arrangement of the officers' desks on a slightly raised platform at one side of the banking room. Here the officers are readily accessible to customers, and from here, at the same time, they can have in full view all that is going on. The scheme of furnishing, too, as may be gathered from the illustrations of the interior, has helped not a little toward the same end. The exterior is of orange-red brick with columns and trim of stone,—a tawny cream limestone marked with rusty red-brown veins, from the quarries near Mount Vernon that once belonged to George Washington and were worked by his slaves. Within the portico the walls are stuccoed and painted. The warmth of coloring in the exterior materials adds to the general air of geniality. Inside, the walls are finished with travertine, and the paving is of blue-stone flagging with a narrow band of marble to define the edge. The grilles and other items of metalwork are of wrought iron and brass in exceptionally pleasing combination. In strong contrast with the creamy travertine of the walls, the curtains are of thin sage-green stuff with orange valances, taking up the tones found in the mural painting. Much of the furniture was designed in the early American manner, the keynote of inspiration in this particular being derived from the tall-case clock which stood in the board room of the old bank, and which is cherished as a valued relic.



Officers' Platform, Moorestown Trust Co.
Davis, Dunlap & Barney, Architects

It will be seen that in point of style the architects have not at all restricted themselves by close adherence to historic precedent. Neither have they indulged in any whimsical or flamboyant radicalism. In other words, knowing and honoring tradition, they have used the body of precedent not as a taskmaster but as a servant. By so doing they have evolved a form of expression essentially modern and vital. It will also be seen that in their liberty of interpretation they have eliminated a number of customary but not absolutely essential details, partly in order to maintain that utter simplicity compatible with the spirit of a Quaker community, and partly in order to keep down expense and apply the appropriation where it would count the most.

The focus of interior interest occurs in the decoration painted on the end wall just above the opening into the vault,—a polychrome map of New Jersey, which at once catches the eyes of everyone entering the door. This mural by Edith Emerson emphasizes the very human quality that characterizes the whole interior. Orange, yellow, green, blue, and a somewhat nondescript but agreeable sea blue-sage green hue are the prevailing colors of the composition, which is enclosed within a Greek key fret and rosette border done in yellow, brown and dull red. A narrow fillet, diagonally banded with black and white, serves to divide the conventional border from the rest of the painting and also sharpens the definition by its iterative accent. Pennsylvania, portrayed without much working out of topographical detail, appears in gradations of orange, while New Jersey,—of course the incident of major interest in the scheme,—carries more trenchant accent through its yellow field surcharged with towns and cities, railways and roads, creeks and rivers, forests, lakes, bays and sundry other natural features of one kind or another that complete its surface.

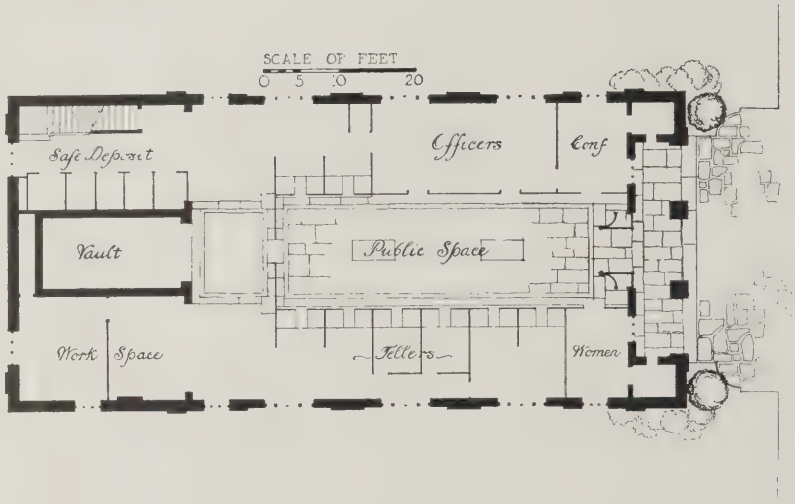
The attitude of the architects toward the craftsmen and others who assisted in realizing the interior is worthy of note. Throughout the course of operations it has been the express aim of the architects to accord generous recognition to the craftsmen and their several functions, thus eliciting their enthusiasm and insuring their best endeavors. Instead of assuming a position of czarist absolutism, the architects have welcomed suggestions, subject to their approval, and fostered the spirit of initiative and collaboration on the part of their craftsmen assistants. The results obtained have justified this policy, through the spontaneity which is everywhere observable.



Plate on Back

MAIN FRONT, MOORESTOWN TRUST CO., MOORESTOWN, N. J.

DAVIS, DUNLAP & BARNEY, ARCHITECTS



PLAN, MOORESTOWN TRUST CO., MOORESTOWN, N. J.

DAVIS, DUNLAP & BARNEY, ARCHITECTS



ENTRANCE DETAIL, MOORESTOWN TRUST CO., MOORESTOWN, N. J.
DAVIS, DUNLAP & BARNEY, ARCHITECTS

BOSTON PUBLIC LIBRARY



BANKING ROOM, MOORESTOWN TRUST CO., MOORESTOWN, N. J.
DAVIS, DUNLAP & BARNEY, ARCHITECTS



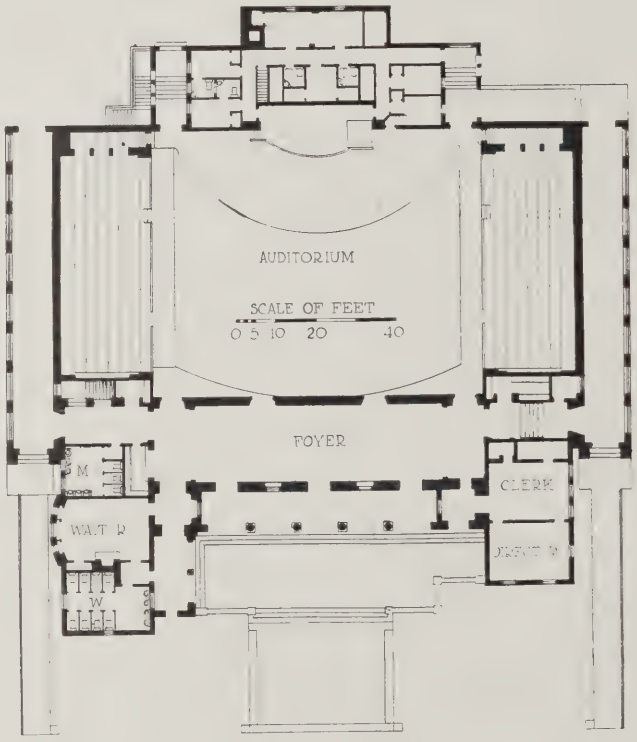
ONE END OF BANKING ROOM, MOORESTOWN TRUST CO., MOORESTOWN, N. J.
DAVIS, DUNLAP & BARNEY, ARCHITECTS



Photos. The Mott Studios *Plans on Back*

THIRTEENTH CHURCH OF CHRIST SCIENTIST, LOS ANGELES

ALLISON & ALLISON, ARCHITECTS



PLAN, THIRTEENTH CHURCH OF CHRIST SCIENTIST, LOS ANGELES

ALLISON & ALLISON, ARCHITECTS



DETAIL OF PORTICO, THIRTEENTH CHURCH OF CHRIST SCIENTIST, LOS ANGELES
ALLISON & ALLISON, ARCHITECTS



ENTRANCE FOYER, THIRTEENTH CHURCH OF CHRIST SCIENTIST, LOS ANGELES
ALLISON & ALLISON, ARCHITECTS



FOYER



AUDITORIUM

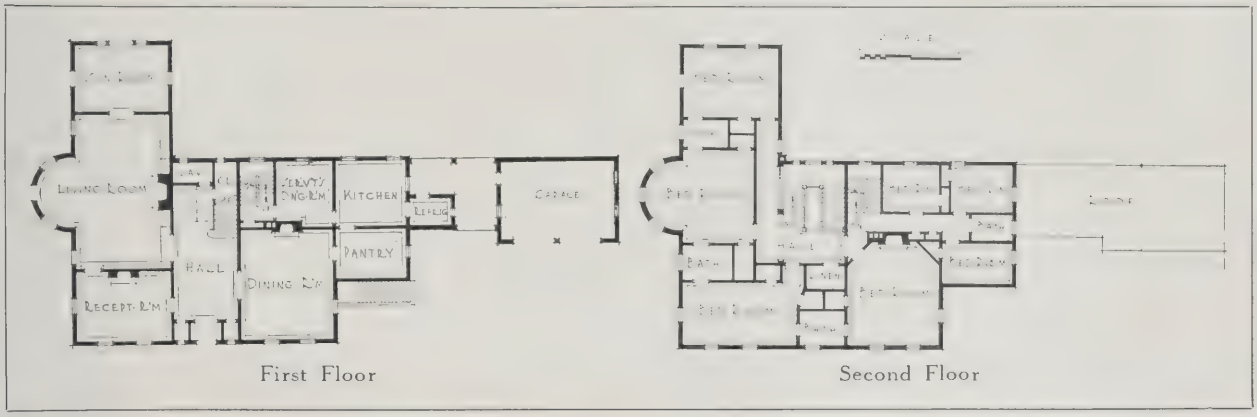
THIRTEENTH CHURCH OF CHRIST SCIENTIST, LOS ANGELES

ALLISON & ALLISON, ARCHITECTS

House of Sherley W. Morgan, Esq., Princeton, N. J.

SHERLEY W. MORGAN, Architect

IT is probable that the quality and extent of an architect's ability may be best judged by work which he does for himself, even though he be sometimes restricted by location or means. Whether large or small, an architect's own house is inevitably indicative of his individual taste. The well known Princeton architect, Sherley W. Morgan, has built for himself an attractive brick house in the Georgian style. The design is marked by refinement of detail and the excellence of its proportions. The effect as a whole is both domestic and dignified. One of the successful features of the design is the one-story brick garage connected with the house by an arched passageway. The care shown in the exterior of the design has also been taken with the plan and details of the interior. The ample height of the first floor ceilings adds to the character of the principal rooms. Interior walls are painted or papered and toned.



First Floor Second Floor



Photos. Tebbs & Knell

House of Sherley W. Morgan, Esq., Architect



HALL



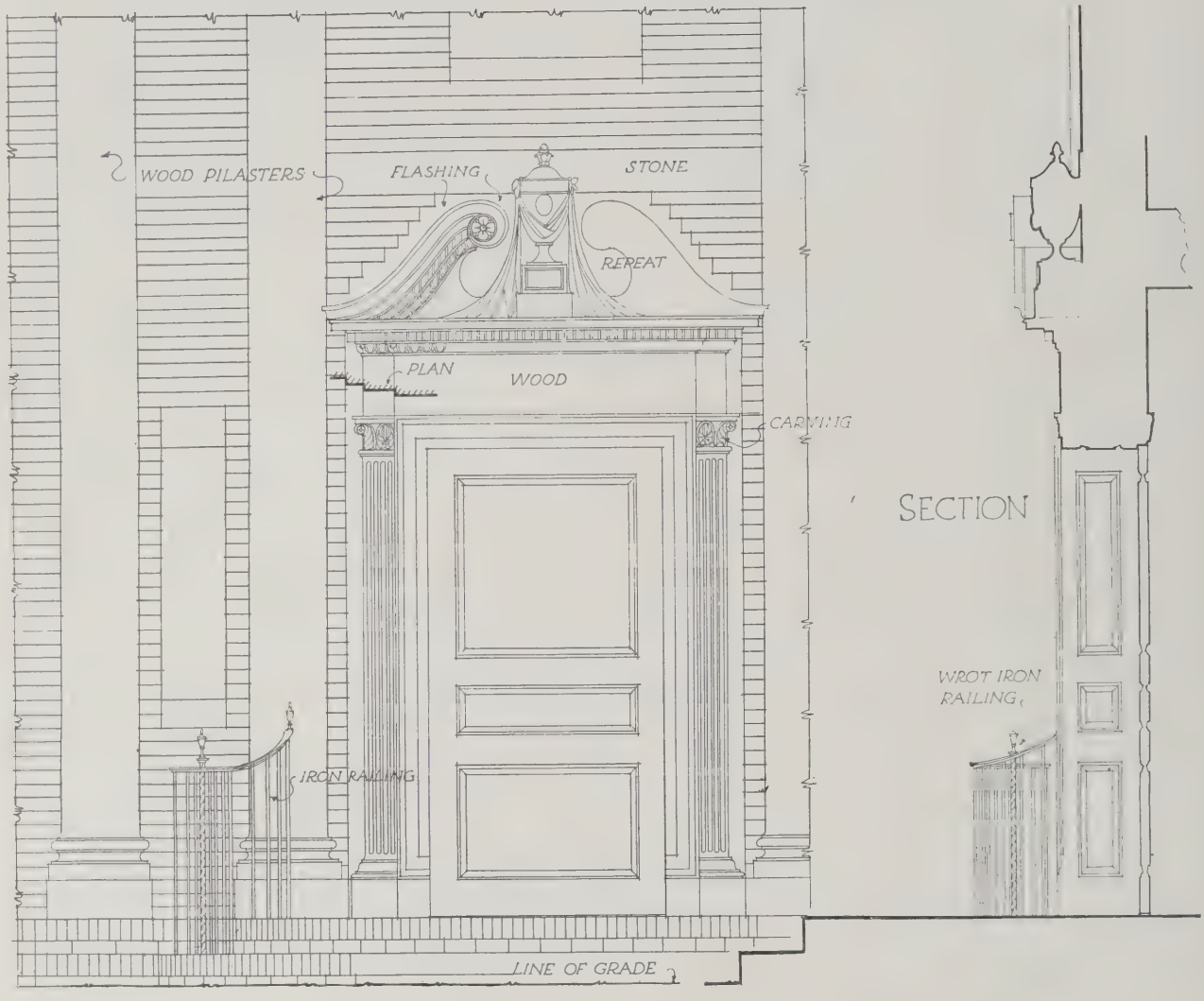
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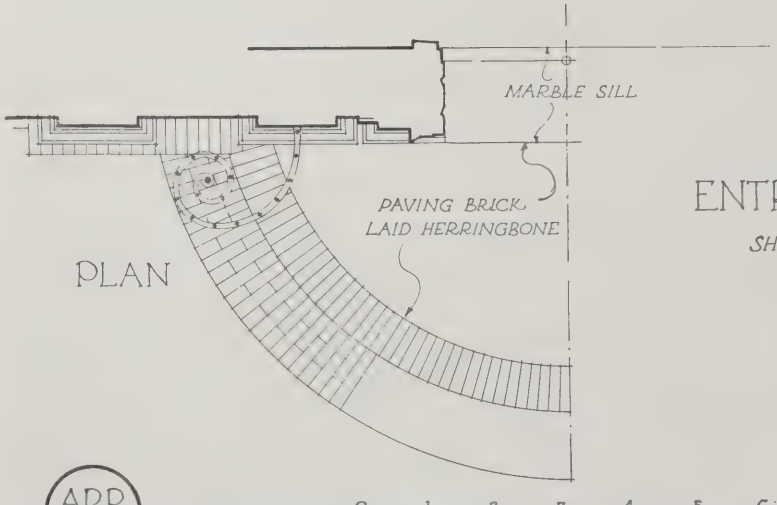
HOUSE OF SHERLEY W. MORGAN, ESQ., ARCHITECT, PRINCETON, N. J.



Detail on Back

ENTRANCE, HOUSE OF SHERLEY W. MORGAN, ESQ., ARCHITECT, PRINCETON, N. J.





DETAIL OF ENTRANCE DOORWAY

SHERLEY W MORGAN ARCHITECT

APR 1927

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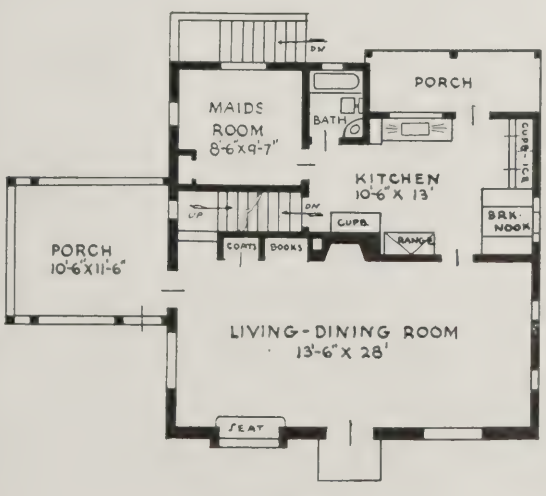
The Architectural Forum Details



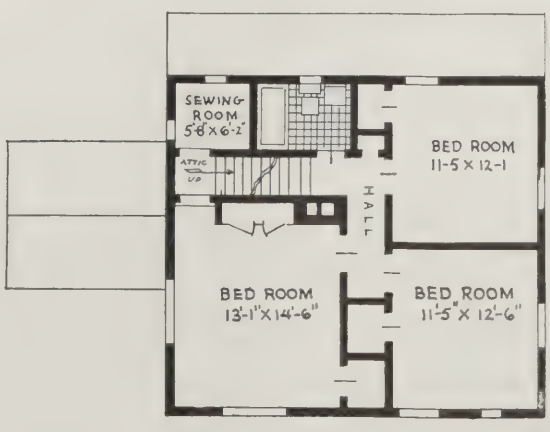
Knickerbocker Photo Service

HOUSE OF F. W. HAEMMEL, ESQ., PORT WASHINGTON, N. Y.

HERE is an interesting house designed by an artist for his own use. Although simple in construction and plan and of moderate cost, this English farm house type of house shows distinction and originality in design. The treatment of the covered living porch is particularly successful, due to the use of brick, stained timbers and a sharply pitched shingle roof, which has in fact the appearance of a kitchen extension made over for use as a living porch. The combination of brick, half-timber and stucco gives a pleasant variety to the front elevation, but it makes the house seem higher than it really is. The massive center chimney, designed in the English style, adds much to the character of the composition as a whole. The main room is of sufficient size to serve as both living and dining room. The window at the right of the front door is purposely left high to permit the placing of the sideboard



First Floor



Second Floor

FORUM SPECIFICATION AND DATA SHEET—166

House of F. W. Haemmel, Esq., Port Washington, N. Y.

OUTLINE SPECIFICATIONS

GENERAL TYPE OF CONSTRUCTION:
Balloon frame.

EXTERIOR MATERIALS:
Stucco; brick; oak and chestnut trim.

ROOF:
Wood shingles.

WINDOWS:
Metal casements.

FLOORS:
Oak.

HEATING:
Hot water.

PLUMBING:
Standard.

INTERIOR MILLWORK:
Specially designed.

INTERIOR WALL FINISH:
Plaster; living room, hall and stair well, trowel finish; all other rooms smooth.

INTERIOR DECORATIVE TREATMENT:
Early American.

APPROXIMATE CUBIC FOOTAGE:
21,000.

COST PER CUBIC FOOT:
67 cents.

DATE OF COMPLETION:
November, 1926.

below it. The inclusion of a maid's room and bath on the first floor off the kitchen permits the use of the entire second floor for family bedrooms and bath. The shingles of the several roofs are stained various shades and are laid in irregular lines to give texture and character. Rough plastered walls and ceiling in the living room make a pleasant contrast to stained pine boarding with which the wall between the living room and the kitchen and stairway is sheathed. The fireplace, which is hospitable in its spaciousness, is sufficiently shallow to throw out heat rather than to send it up the chimney, as is usually the case with deep fireplaces. At the foot of the stairway, which is lighted by a window opening onto the living porch, a door is placed to conserve heat in the living room and prevent down drafts, which are the common fault of stairways opening directly into a large room. Heavy oak rafters carrying the joists of the second floor are left exposed below the rough plastered living room ceiling, a characteristic feature of early American houses. In fact, the entire design of this house, considered broadly, suggests the early architecture of this country more than it does that of England itself.



Minor Facade, House of F. W. Haemmel, Esq., Port Washington, N. Y.



Photos. A. M. Vinje

HOUSE OF DR. WILLIAM A. MOWRY, MADISON, WIS.
LAW, LAW & POTTER, ARCHITECTS

IT is a far fly from Long Island to Wisconsin, where we find this interesting house somewhat suggestive of the English cottage. The use of very rough joints and crudely laid brick gives a semblance of the style of brickwork known as "skintled," so popular today in the middle west. In this case the brick are actually laid to a fairly flat surface, but the protruding mortar of the joints produces a very crude effect which pleases some architects and their clients. The character and overhang of the roof were perhaps intended to resemble the heavy thatched roofs found on some of the old English cottages. Unfortunately, necessity required the introduction of a small dormer window high up on the slope of the long roof. How many architects struggle in vain to persuade their clients to sacrifice in-



First Floor



Second Floor

FORUM SPECIFICATION AND DATA SHEET—167

House of Dr. William A. Mowry, Madison, Wis.; Law, Law & Potter, Architects

OUTLINE SPECIFICATIONS

GENERAL TYPE OF CONSTRUCTION:
Frame construction on concrete basement walls.

EXTERIOR MATERIALS:
Common brick veneering, stucco and shingles.

ROOF:
Stained cedar shingles.

WINDOWS:
Metal casements.

FLOORS:
Oak; tile in vestibule, hall and dining room.

HEATING:
Hot water; oil burner.

PLUMBING:
Porcelain fixtures.

ELECTRICAL EQUIPMENT:
General lighting and refrigeration.

INTERIOR MILLWORK:
Pine finish, birch doors, oak stairs.

INTERIOR WALL FINISH:
Sand-finished plaster.

INTERIOR DECORATIVE TREATMENT:
Woodwork stained; walls painted on first floor; on second floor, walls tinted.

CUBIC FOOTAGE OF BUILDING:
44,000.

COST PER CUBIC FOOT:
43 cents.

YEAR OF COMPLETION:
1926.

terior light and arrangement to the picturesque quality so often secured by long, unbroken roof slopes! The plan shows a garage incorporated as part of the design of the house, the projecting walls of which do not quite meet those of the house itself at right angles. Possibly this variation from the rectangular was necessitated by topographical conditions. The plan of the first floor is compact and interesting. On the second floor there are four bedrooms, two baths and a sewing room, and many closets.



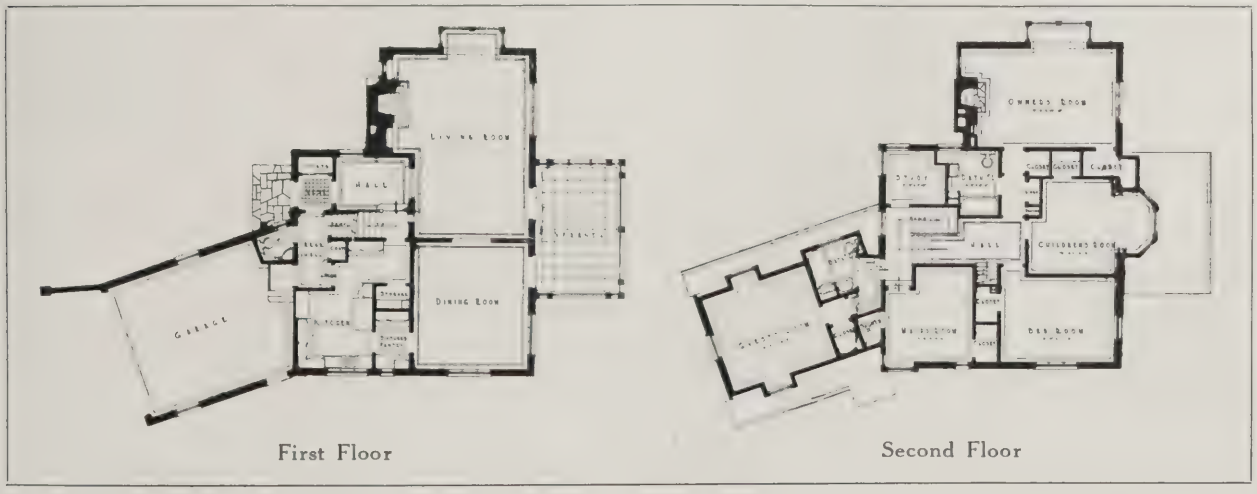
Entrance, House of Dr. William A. Mowry, Madison, Wis.
Law, Law & Potter, Architects



Photos. A. M. Vinje

HOUSE OF WILLIAM W. CARGILL, ESQ., MADISON, WIS.
LAW, LAW & POTTER, ARCHITECTS

HERE is another house at Madison, Wis., designed by the architects of that just illustrated. Somewhat larger in size and covering a greater square footage, this house shows a pleasing consistency in design and treatment. The high-pitched roofs of the main house and short wing are unbroken in their long sweeps. The single chimney is well placed at the angle between the main house and the short wing; in height and size it forms the distinctive feature of the principal elevation. The height of this house and the whitewashed "skintled" brickwork give a suggestion of the picturesque in its design as well as in its setting. The plan is interesting and shows careful study to give the living room and dining room as much privacy and as pleasant an outlook as possible. To accomplish this the entrance door is placed at what would seem to be the rear of the house and close to the wall of the garage, which slopes back at an angle from the main house, probably for the purpose of giving space and dignity to the approach to the main entrance. Stained wood trim and stained shingles for the gable ends of the house afford a pleasant contrast to the very rough whitewashed brickwork. Stucco and half-timber relieve the severity of the design under some of the second story windows. The double bay window at one end of the house, seen in the accompanying illustration, is quite English in its conception. Tall but shallow, this bay is logically roofed in a typically English manner. An open terrace on which is located the veranda or living porch overlooks a lake and distant landscape. The large trees on the property add much to the interest of the house by providing a pleasant, informal note of line and color in contrast to the rather severe and austere treatment of the building itself. The plan also shows how carefully the arrangement of the rooms has been adapted to the site. Off the entrance vestibule a



First Floor Second Floor

FORUM SPECIFICATION AND DATA SHEET—168

House of William W. Cargill, Esq., Madison, Wis.; Law, Law & Potter, Architects

OUTLINE SPECIFICATIONS

GENERAL TYPE OF CONSTRUCTION:
Frame construction on concrete basement walls.

EXTERIOR MATERIALS:
Common brick veneering.

ROOF:
Cedar shingles.

WINDOWS:
Metal casements with weather strips.

FLOORS:
Oak.

HEATING:
Hot water.

PLUMBING:
Porcelain fixtures.

ELECTRICAL EQUIPMENT:
General lighting and pump.

INTERIOR MILLWORK:
Oak and pine.

INTERIOR WALL FINISH:
Sand-finished plaster.

INTERIOR DECORATIVE TREATMENT:
Oak woodwork stained, first floor; walls painted; enameled woodwork, second floor.

APPROXIMATE CUBIC FOOTAGE:
48,000.

COST PER CUBIC FOOT:
42¼ cents.

YEAR OF COMPLETION:
1925.



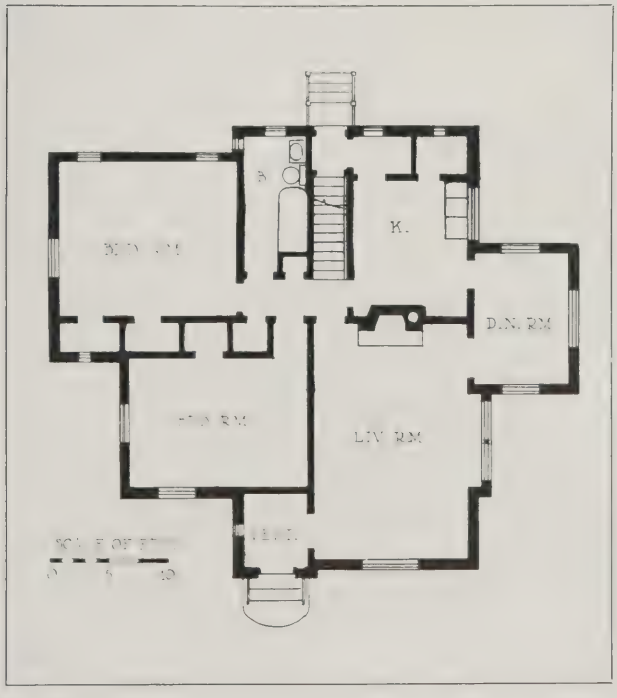
Front Entrance Detail, House of William W. Cargill, Esq., Madison, Wis.
Law, Law & Potter, Architects

rear hall leads back to the kitchen and garage. A spacious coat closet and a lavatory, as well as stairs leading to the basement, open off this rear hall. The vestibule is separated from the living room by a short stair hall at a slightly higher elevation. The large living room opens directly into the dining room beyond it, both of these rooms having double doors leading to the veranda. The second floor shows three master bedrooms and a maid's room and shower. As there is no servant's bathroom provided in the basement, it would seem that the bathroom adjacent to the guest room on the second floor is intended for the maid's use also. This paucity of bathrooms is rather surprising in so large and carefully planned a house as this. The numerous jogs and angles in the plan of the second floor are unfortunate, as is also the irregular shape of the kitchen on the first floor where the pantry and storage closet materially reduce its size and determine its irregular shape. The accessibility of the garage is to be especially commended.



Photos. P. A. Nyholm

HOUSE OF PETER A. H. VOORHIS, ESQ., YONKERS, N. Y.
G. HOWARD CHAMBERLIN, ARCHITECT



ROUGH-CAST plaster and a good roof determine the character of this simple design, which emphasizes the charm of unbroken roof slopes. In plan this house is practically a "bungalow," since all the principal rooms are on the first floor. Although none of the rooms are large, the plan is so arranged that all of them are of adequate size. The small dining room or "alcove" with its corner cupboards and three windows, connected with the living room by an open archway, is cozy, cheerful and hospitable. On the left of the fireplace another arch leads back to the kitchen, main stairway and bedrooms. Ample closet space is provided, and a bath is accessible from both bedrooms. Above the main part of the house are two rooms and an additional bath. Although the windows are few enough to leave large unbroken wall areas, they are sufficiently large to provide adequate light and sunshine. Even the entrance vestibule with its interesting door has a small casement window at one side. Unfortunately, neither the illustration of the house nor its plan shows exactly how the valley between the roofs of the two projecting wings of the house is treated.

FORUM SPECIFICATION AND DATA SHEET—169

House of Peter A. H. Voorhis, Esq., Yonkers, N. Y.; G. Howard Chamberlin, Architect

OUTLINE SPECIFICATIONS

GENERAL TYPE OF CONSTRUCTION:
Stucco on concrete blocks; light buff color.

EXTERIOR MATERIALS:
Stucco walls; rough finish.

ROOF:
Wood shingles.

WINDOWS:
Casements, steel cottage type.

FLOORS:
Double floors.

HEATING:
Hot water.

PLUMBING:
Brass water pipes.

ELECTRICAL WORK:
House wired throughout.

INTERIOR WOODWORK:
Oak.

INTERIOR WALL FINISH:
Cement plaster on metal lath throughout.

INTERIOR DECORATIVE TREATMENT:
Cement plaster, pre-colored.

APPROXIMATE CUBIC FOOTAGE:
28,851.

COST PER CUBIC FOOT:
44-8/10 cents.

DATE OF COMPLETION:
March, 1926.

This arrangement of one gable projecting beyond another is quite common in England, where snow is rare, but is seldom practical in the northern states of this country. Possibly there is a sloping jib or transverse ridge which prevents snow from piling up between the roofs of these two wings. Otherwise, the accumulation of snow in these areas would injure the roofing and flashing and cause leakage.

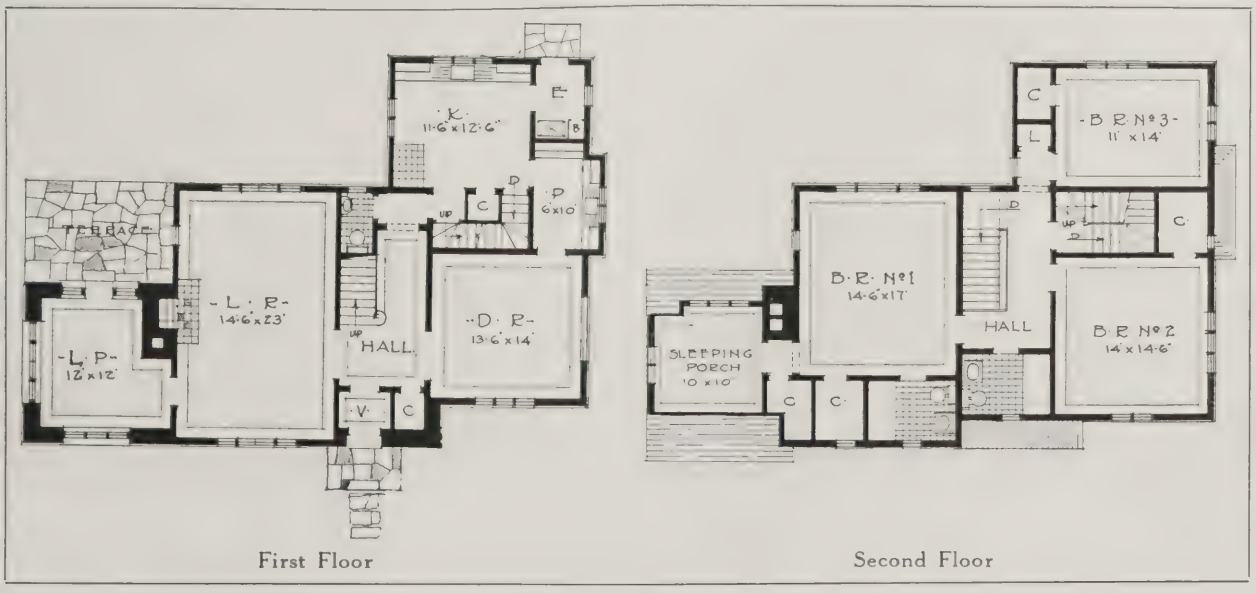


Living Room, House of Peter A. H. Voorhis, Esq., Yonkers, N. Y.
G. Howard Chamberlin, Architect



HOUSE AT SCARSDALE, N. Y.
GEORGE FULTON, JR., ARCHITECT

SOME of the chief characteristics of English cottage architecture, such as brick window sills, rough stone for the trim around the entrance door, rough-cast stucco and half-timber work, are found in the design of this house at Scarsdale. The high center gable with its long sloping roof successfully breaks the horizontal lines of the main part of the house. Half-timber work, which appears at only one point on the front elevation, might well have been repeated in the gable end of the living porch wing, which seems to need some more definite break between the stonework of the first story and the rough stucco of the gable above. The rough stonework around and adjacent to the entrance door might have been continued across the front of the center bay, thus serving to make a better tie between the stone walls of the living porch and the entrance door of the house. The purpose of this scattered use of stone was undoubtedly to give a picturesque quality to the walls of the house. The massive main chimney is logically placed at the point where the low roof of the living porch joins the long slope of the roof of the main house. The well thought out plan shows no waste space and no unattractive jogs or angles in any of the rooms. The projection into the living porch of the main chimney is naturally unavoidable. Although not unusual, the plan is convenient and compact. The coat closet and lavatory adjacent to the entrance hall are conveniences which should never be omitted in even the smallest houses. Three bedrooms, two baths and several large closets, as well as an ample sleeping porch make up the plan of the second floor. As a whole, the design shows originality and distinctive character.



First Floor Second Floor

FORUM SPECIFICATION AND DATA SHEET—170

House at Scarsdale, N. Y.; George Fulton, Jr., Architect

OUTLINE SPECIFICATIONS

GENERAL TYPE OF CONSTRUCTION:
Wood frame.

EXTERIOR MATERIALS:
Stucco on metal lath; brick and stone.

ROOF:
Slate.

WINDOWS:
Metal casements.

FLOORS:
Oak and pine.

HEATING:
Steam.

PLUMBING:
Brass pipe, porcelain and enameled fixtures.

ELECTRICAL EQUIPMENT:
Lighting fixtures.

INTERIOR MILLWORK:
Chestnut and pine.

INTERIOR WALL FINISH:
Plaster.

INTERIOR DECORATIVE TREATMENT:
Main rooms, rough, antique-finished plaster.

APPROXIMATE CUBIC FOOTAGE:
37,500.

COST PER CUBIC FOOT:
48 cents.

DATE OF COMPLETION:
April, 1925.

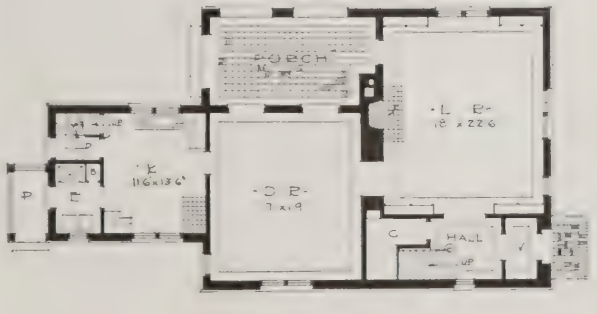


Entrance Detail, House at Scarsdale, N. Y.
George Fulton, Jr., Architect



HOUSE IN WESTCHESTER COUNTY, N. Y.
GEORGE FULTON, JR., ARCHITECT

THIS house illustrates the possibility of relieving the bleak severity of a rectangular brick house by means of a dominant architectural feature. In this instance, a slightly projecting gable faced with stucco and half-timber and supported on heavy wooden brackets gives a certain importance to an otherwise stereotyped design. The spacing and paucity of the windows provide excellent wall surfaces, which always add architectural character to houses large or small. The care taken in the detail of the entrance door also indicates an effort to provide a few distinctive notes in an otherwise necessarily severe design. As in the plan of other houses here discussed, an arrangement of rooms is found in which there is no waste space, and the living porch is accessible from both the living room and the dining room. As is logical in small houses, a pantry between dining room and kitchen is omitted. The kitchen is of adequate size and is well lighted and ventilated by windows on opposite walls. The rear entry is large enough to accommodate not only an ice box and broom closet but also two laundry trays;



First Floor



Second Floor

FORUM SPECIFICATION AND DATA SHEET—171

House in Westchester County, N. Y.; George Fulton, Jr., Architect

OUTLINE SPECIFICATIONS

GENERAL TYPE OF CONSTRUCTION:
Brick walls; wood framing.

EXTERIOR MATERIALS:
Brick; cypress trim; stucco on metal lath.

ROOF:
Slate, variegated.

WINDOWS:
Double-hung; wood.

FLOORS:
Oak in main rooms.

PLUMBING:
Fixtures enameled iron and porcelain.

ELECTRICAL EQUIPMENT:
Lighting fixtures.

INTERIOR WALL FINISH:
Plaster painted or specially finished.

INTERIOR DECORATIVE TREATMENT:
Bedrooms painted; painted trim throughout.

APPROXIMATE CUBIC FOOTAGE:
51,800.

COST PER CUBIC FOOT:
40 cents.

DATE OF COMPLETION:
November, 1925.

this is a better location for them than the kitchen itself. The cellar below and the maid's room and bath above are directly accessible from the kitchen by means of stairs located at one corner of the kitchen wing. The second floor, which is equally well planned, has four corner rooms of adequate sizes, good closet space, and two bathrooms. It might be suggested that a door connecting the maid's room with the main part of the house on the second floor might be desirable and convenient. Careful study of these plans indicates that this is an ideal layout for a small house, particularly in the suburbs.



Photos. Charles E. Moore

The Main Entrance



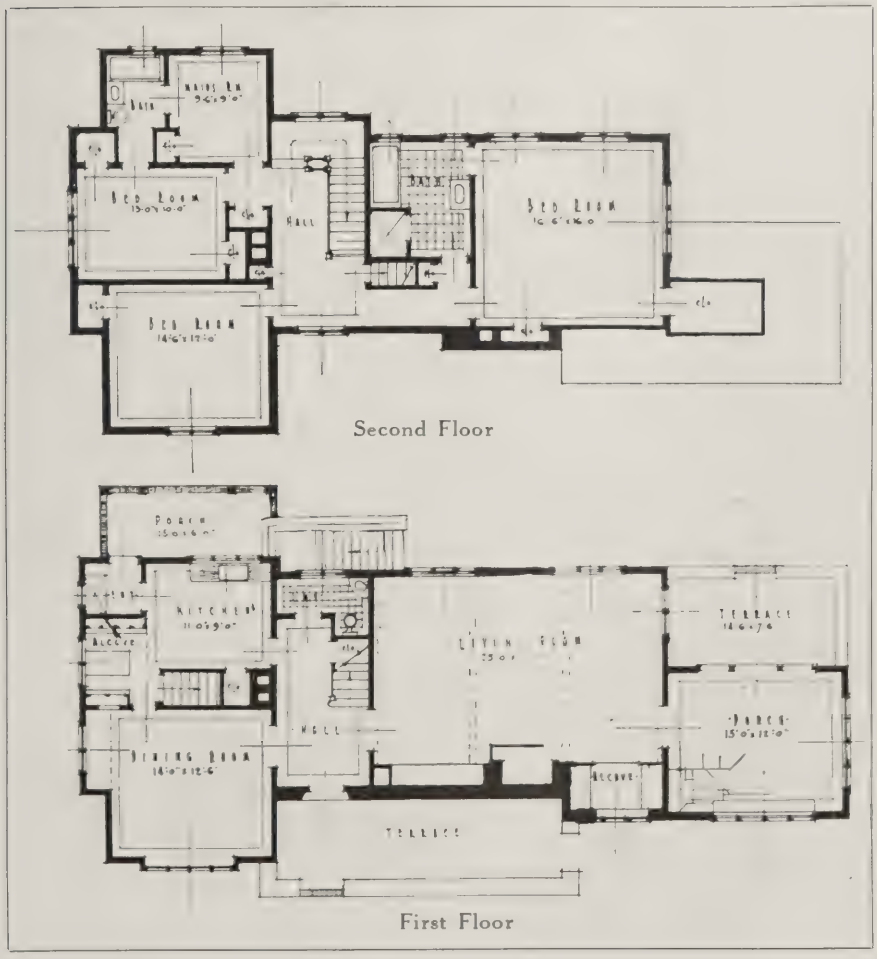
Detail of Entrance

House in Westchester County, N. Y.
George Fulton, Jr., Architect



Photos. John Wallace Gillies

HOUSE OF CHARLES H. CUNO, ESQ., MERIDEN, CONN.
FRANK J. FORSTER, ARCHITECT



IT is always a privilege to publish illustrations and plans of any house by this talented architect, of whose work anything but favorable criticism is seldom justifiable. Much of the charm of an old English house is suggested in this interesting design. The long, sloping pitch of the unbroken roof gives the necessary informal note to the design. The massive chimney with its double top breaks the design at the right place, balancing in a measure the projecting and overhanging gable at one end of the house. The low, one-story entrance porch which fills in the space between the chimney and the projecting bay has a roof similar in pitch and covering to the main roof above. The brickwork of this porch is skillfully tied in with the rough stonework of the main chimney, the character and quality of which might well be studied and copied by designers of houses supposedly following English precedent. The average size of the stones

FORUM SPECIFICATION AND DATA SHEET—172

House of Charles H. Cuno, Esq., Meriden, Conn.; Frank J. Forster, Architect

OUTLINE SPECIFICATIONS

GENERAL TYPE OF CONSTRUCTION:
Frame on concrete foundations; stone front wall.

EXTERIOR MATERIALS:
Brick veneer of selected common brick; stucco on wire lath; oak timber and half-timber; chimney and terrace wall of rubble.

ROOF:
Slate.

WINDOWS:
Metal casements.

FLOORS:
Random width oak floors in first story; 2¼-inch oak floors in second story; pine in service portion; cork tile in kitchen.

PLUMBING:
Galvanized wrought iron pipe.

ELECTRICAL EQUIPMENT:
Special wrought iron lighting fixtures.

INTERIOR MILLWORK:
Oak; no trim at doors; oak doors, stairs, mantel and living room paneling.

INTERIOR WALL FINISH:
Smooth brown coat plaster in first story.

INTERIOR DECORATIVE TREATMENT:
Woodwork stained and waxed in oak rooms; woodwork painted elsewhere.

APPROXIMATE CUBIC FOOTAGE:
30,000.

used is in perfect scale with the brickwork and rough slates. The apparent length of the house is considerably increased by the several horizontal lines of overhanging eaves. Particularly is this true on account of the successful way the roof of the living porch extension has been made a part and continuation of the main roof of the house. Another detail showing the great care and thought exercised in this design is the low chimney which breaks the ridge of the main roof. Instead of constructing this chimney of rough stone or brick, as might have been done, stucco has been used to make it lighter and less important in effect. The plan is as convenient and consistent as the exterior is homelike. The stair hall separates the large living room from the dining room and kitchen. The covered living porch as well as one corner of the living room opens upon an open paved terrace at the rear. As the house is located near the highroad, this paved terrace provides the necessary privacy and seclusion. The servants also have a spacious porch back of the kitchen. Although the house is irregular in outline, the three master bedrooms on the second floor are all rectangular and devoid of breaks and angles. There is one large master's bath, located near the center of the second floor, and another bath between the smallest bedroom and the maid's room. As this bath connects with both rooms, it is possible for the maid's room to be used for a nursemaid or governess and the bedroom as a nursery. The high pitch of the roof makes is quite possible for additional bedrooms to be placed in the gable ends of the third floor, if necessary.



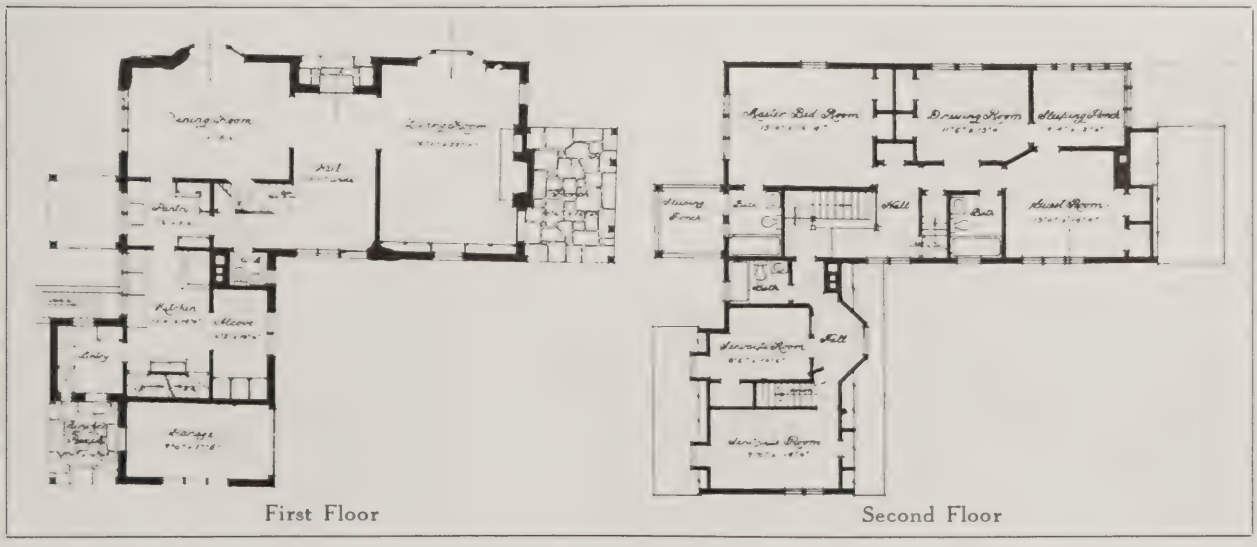
Garden Front, House of Charles H. Cuno, Esq., Meriden, Conn.
Frank J. Forster, Architect



Photos. John Wallace Gillies

HOUSE OF MRS. GRACE M. BURNHAM, GREAT NECK, N. Y.
FRANK J. FORSTER, ARCHITECT

THIS house at Great Neck is such a good example of the combination of simplicity of plan and originality of elevation that it seems desirable to include it in this group. The use of rough plaster, which relieves the monotony of too much brick wall surface, is satisfactory and successful. Even the dormers on the rear slope of the roof above the kitchen extension are so well proportioned and designed that they add to rather than detract from the artistic quality of the house. As usual in Mr. Forster's work, the tall chimneys which are dominant notes in this design are so well placed and so carefully balanced that they are perhaps the most important feature of the exterior. The brick walls with their studied texture and roughness are even more beautiful in reality than in the illustrations, from which, unfortunately, no idea of their color can be obtained. Another consistent and logical detail is the use of rough plaster in the jib formed by the top of the living porch and the low sloping continuation of the high hip roof. Although this jib is practically a continuation of the front facade, it is neither good construction nor pleasing in effect when brick is used for wall surfaces supported by wood beams over open spaces. The same logical use of stucco is found in the rear elevation, and in the sleeping porch above the pantry. The variety and proportions of the several well placed windows add much to the effectiveness of the design. At the rear of the house an open terrace permits an uninterrupted view of the distant landscape. The plan is straightforward and well balanced, having a cen-



First Floor Second Floor

FORUM SPECIFICATION AND DATA SHEET—173

House of Mrs. Grace M. Burnham, Great Neck, N. Y.; Frank J. Forster, Architect

OUTLINE SPECIFICATIONS

GENERAL TYPE OF CONSTRUCTION:
Frame construction on concrete foundations.

EXTERIOR MATERIALS:
Common brick veneer; stucco on wire lath; cypress, solid and half-timber.

ROOF:
Slate.

WINDOWS:
Wood sash; part double-hung, part casements.

FLOORS:
Pine, random widths.

PLUMBING:
Galvanized wrought iron pipe.

INTERIOR MILLWORK:
Oak; no trim at doors; oak doors, stairs, and mantel.

INTERIOR WALL FINISH:
Rough plaster in main first story rooms; white coat plaster elsewhere.

INTERIOR DECORATIVE TREATMENT:
Woodwork stained and waxed in oak rooms, painted elsewhere; white coat plaster painted; quarry tile floor in hall.

APPROXIMATE CUBIC FOOTAGE:
37,000.

ter hall with living room and dining room on opposite sides. The kitchen, pantry and garage are in a wing by themselves. Although actually built into this service wing, the garage has no direct connection with the house itself but is approached through an open porch at the rear of the kitchen. A lavatory and coat closet, which are always essential features of a well planned house, connect with the main stair hall on the first floor. The second floor has a large master's bedroom, dressing room and sleeping porch, which occupy one entire side of the house. A second bath and sleeping porch are connected with another large bedroom. The second floor of the service wing contains two servants' bedrooms and a bath. The plan of the second floor is sufficiently individual to indicate that the house was designed for a family without children, which observation brings out the fact that every successful house is planned to meet the requirements of the household which will occupy it, a fact well demonstrated here.



Garden Front, House of Mrs. Grace M. Burnham, Great Neck, N. Y.
Frank J. Forster, Architect

INTERIOR ARCHITECTURE

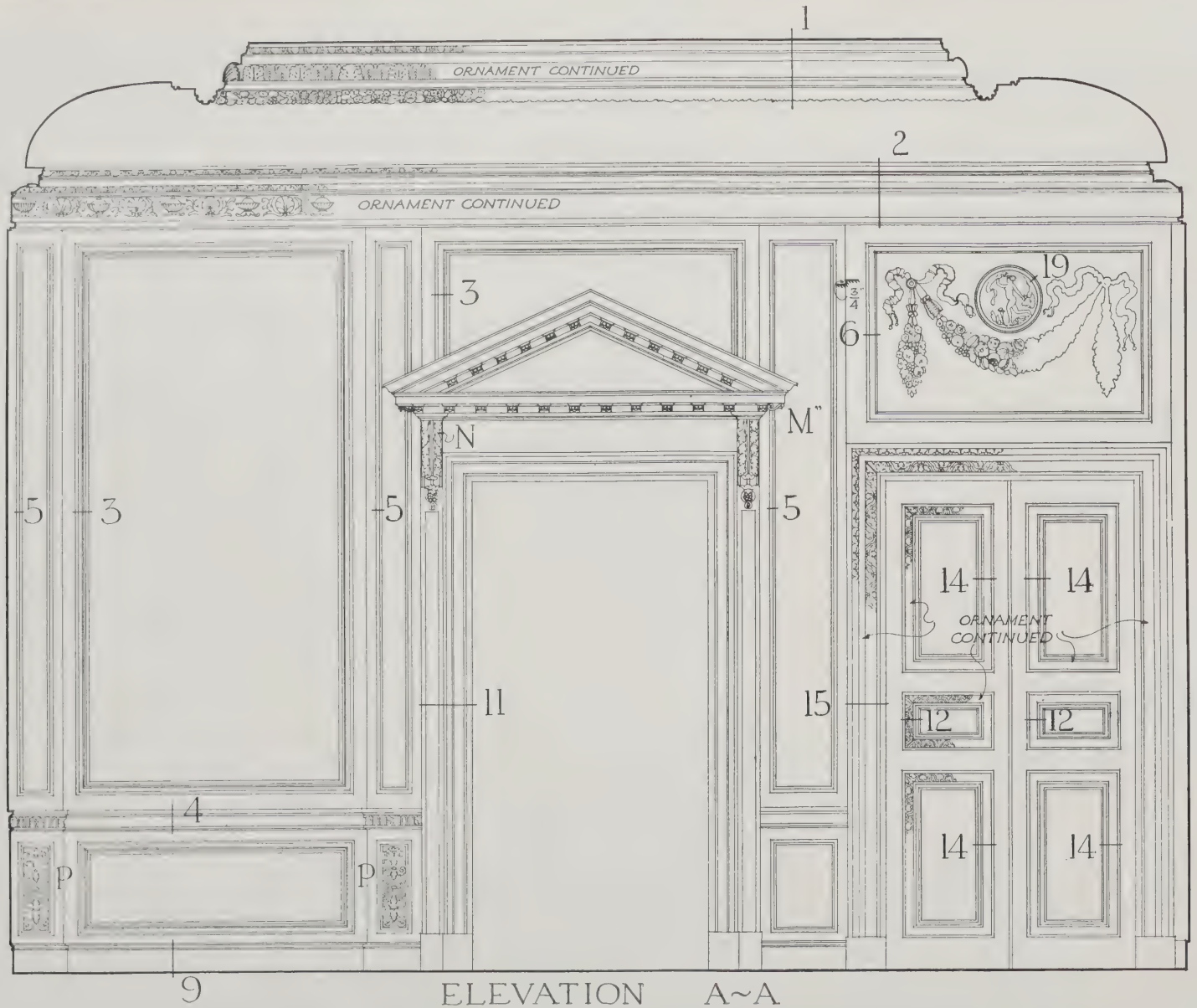
Dining Room, Hotel de Chaulnes, Paris

By C. HAMILTON PRESTON

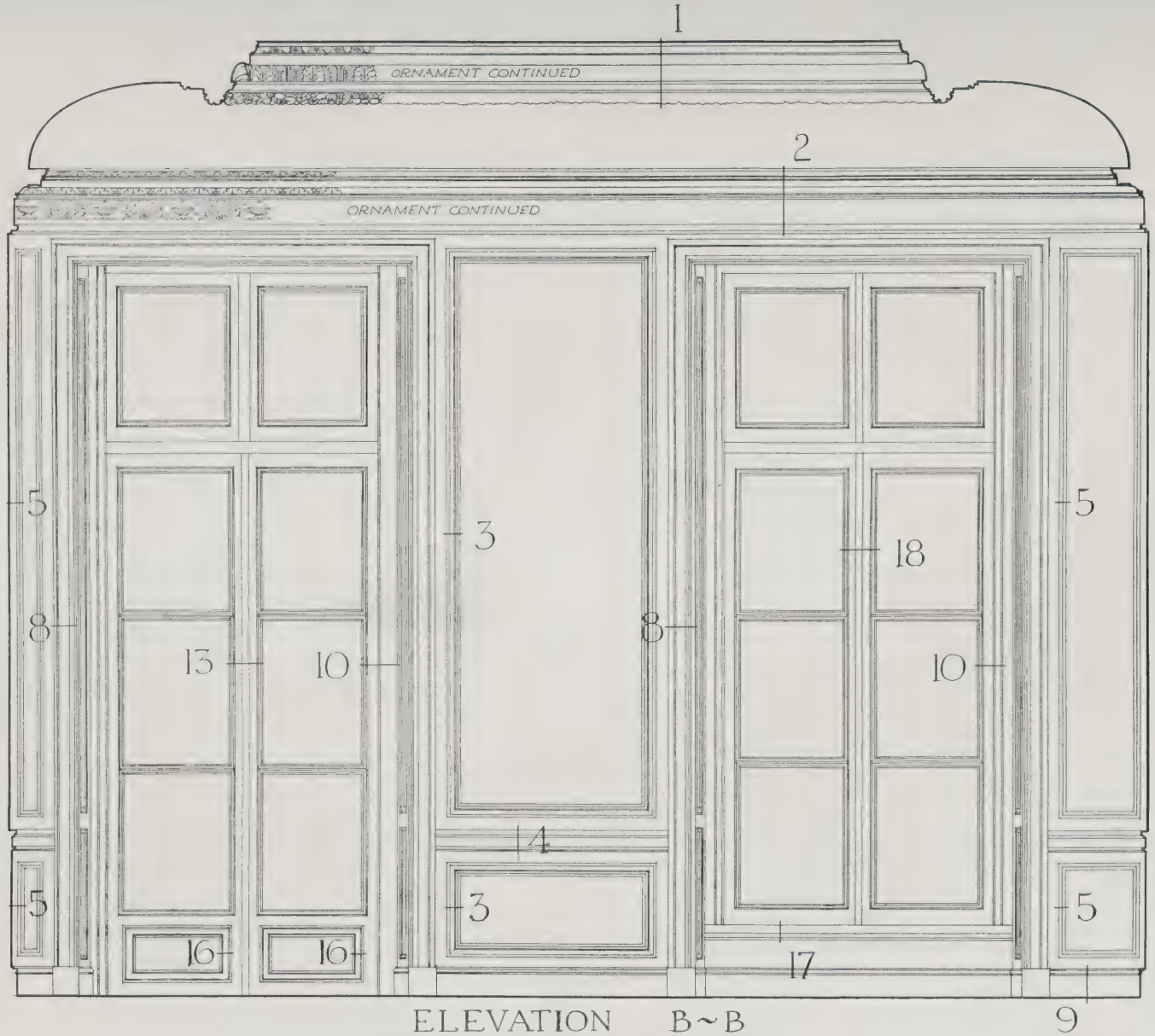
THE charming little Empire library of this hotel has already been presented in this series of articles. The subject of this study, a room of exceeding dignity and fine proportions, formerly served as the dining room. In design it is a curious mingling of the work of two different periods. The double doors on either side, with their bold ornamental mouldings and heavy, decorated architraves, are of the Louis XIV epoch, while the over-panels of the doors with their bold and yet delicately designed and executed swags and plaques are distinctly Louis XVI. The niches, which are the predominant features of the room on either side, very refined in design and detail, are also Louis XVI. The detail of the supporting brackets and of the modillions of the cornice and pediments of these niches is exquisite and should be particularly noted. The well spaced and proportioned panels of the room are also Louis XVI. The cornice, however, bold and vigorous and profusely decorated in free and almost crudely executed detail, is Louis XIV in design, as is also the series of mouldings occurring at the junction of the cove and ceiling. The extreme height given to the room by the addition of the cove adds greatly to its dignity. The room is executed in plaster and marbleized in pinkish yellow with mauve, gray and red veins.



Two-Thirds Elevation C-C Shown on Page 401

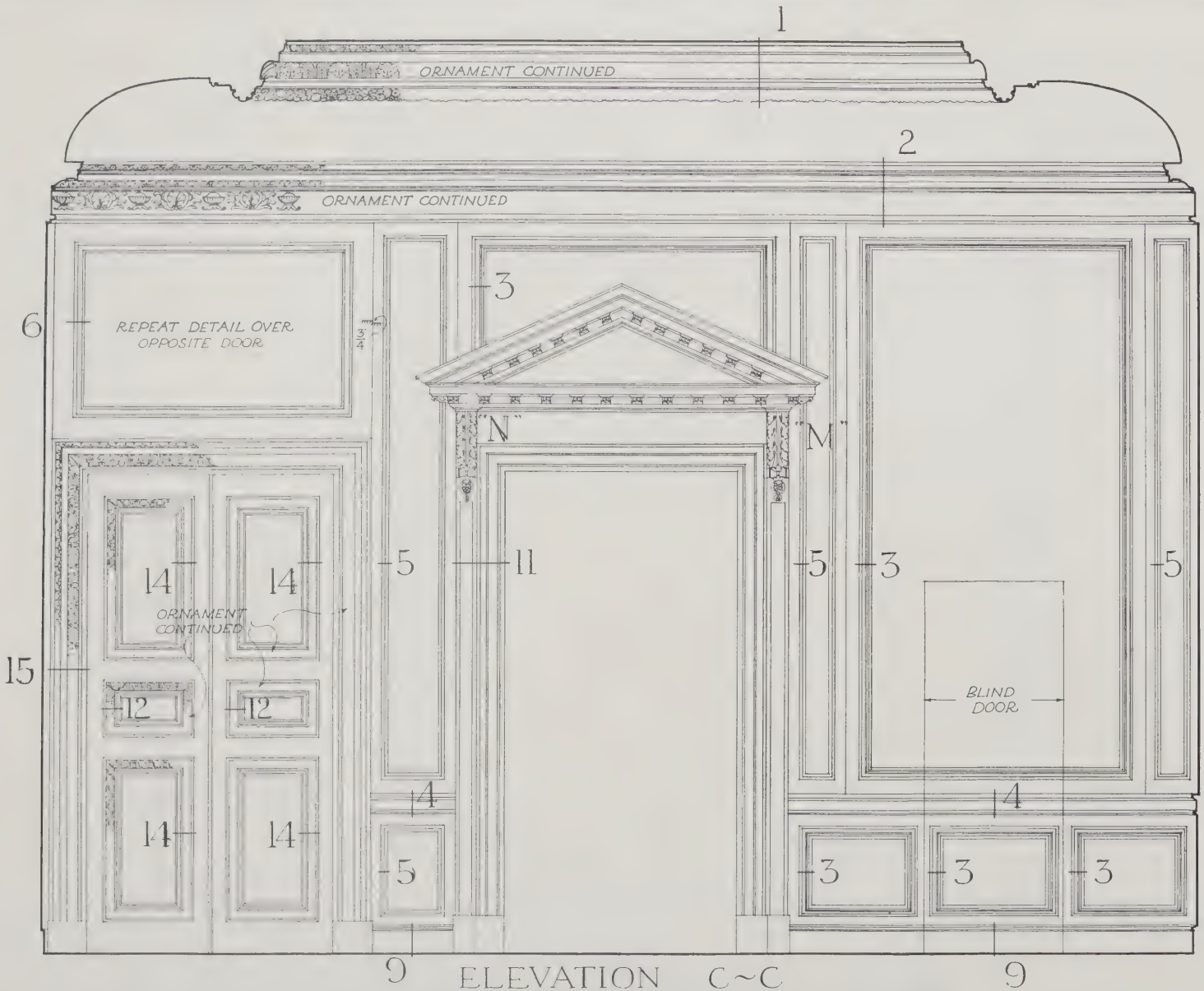


ELEVATION A~A
SALLE 'A MANGER
HOTEL DE CHAULNES
PARIS
Scale 3/8" = 1' Foot



ELEVATION B~B
SALLE A MANGER
HOTEL DE CHAULNES
PARIS
Scale 3/8" = 1 Foot

1927 103 The Architectural



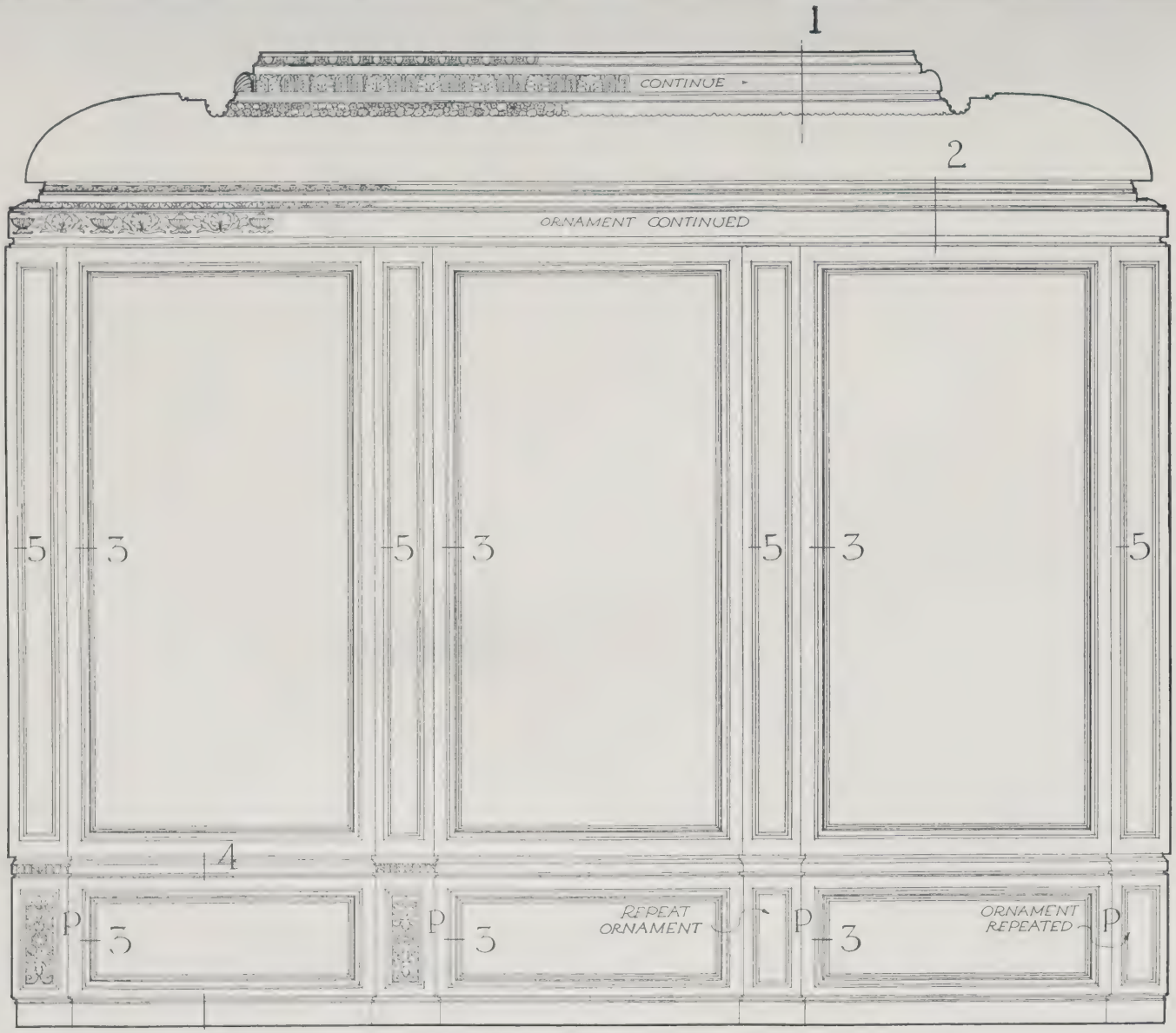
ELEVATION C~C

SALLE 'A MANGER

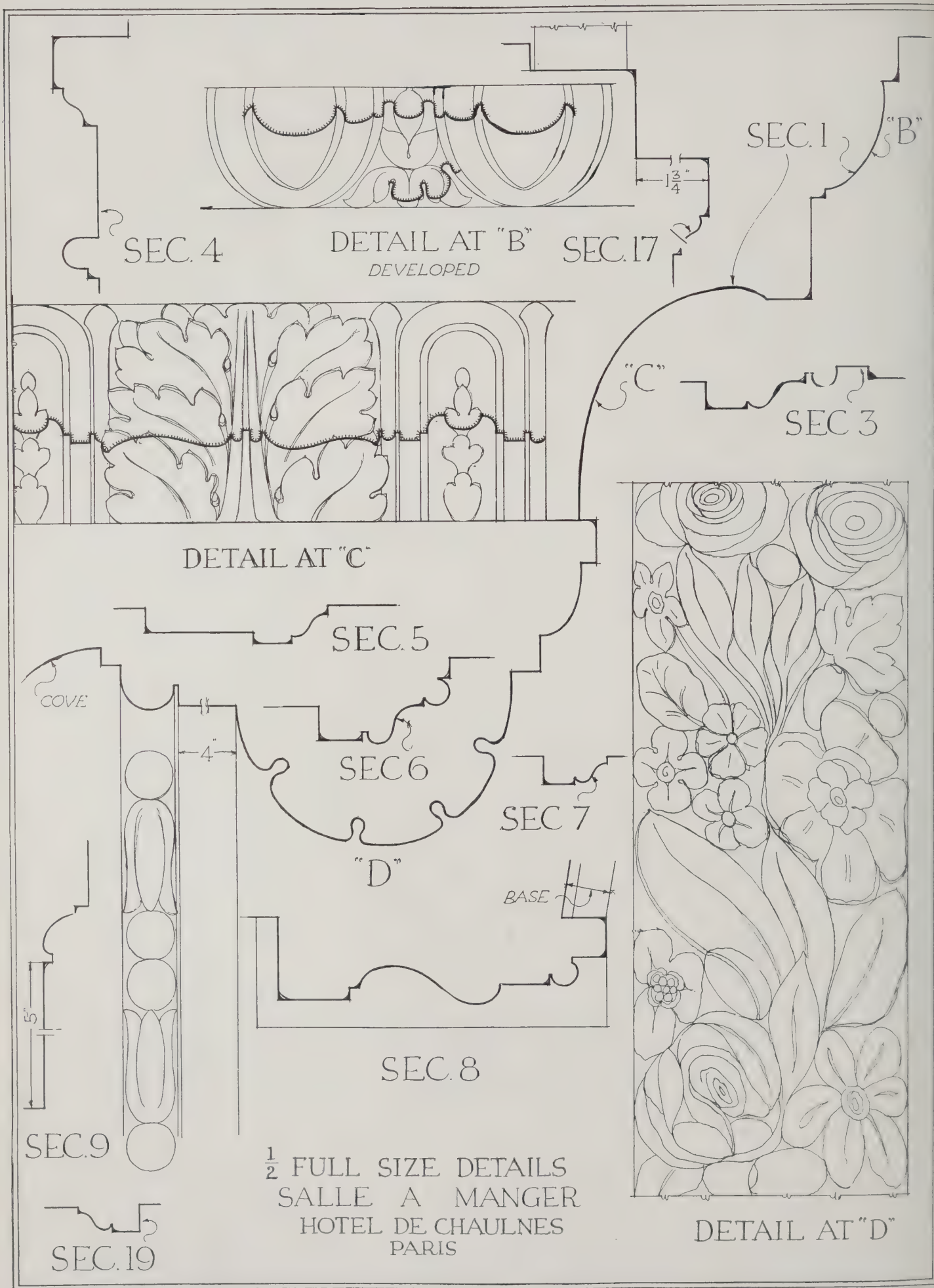
HOTEL DE CHAULNES

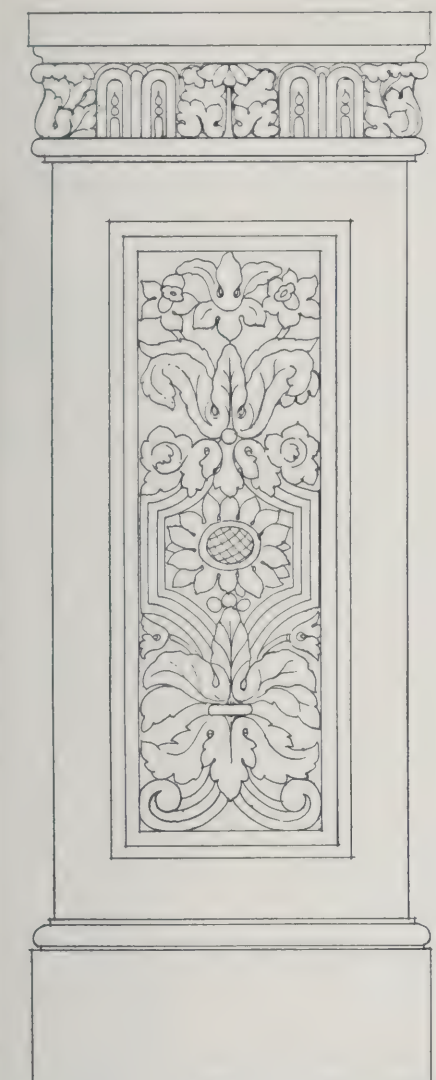
PARIS

Scale 3/8" = 1 Foot

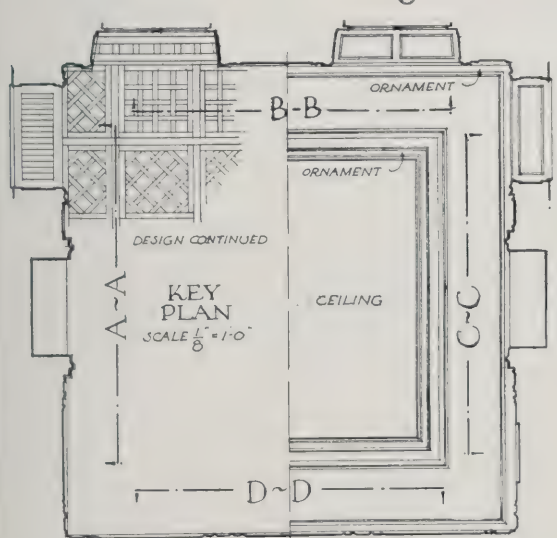


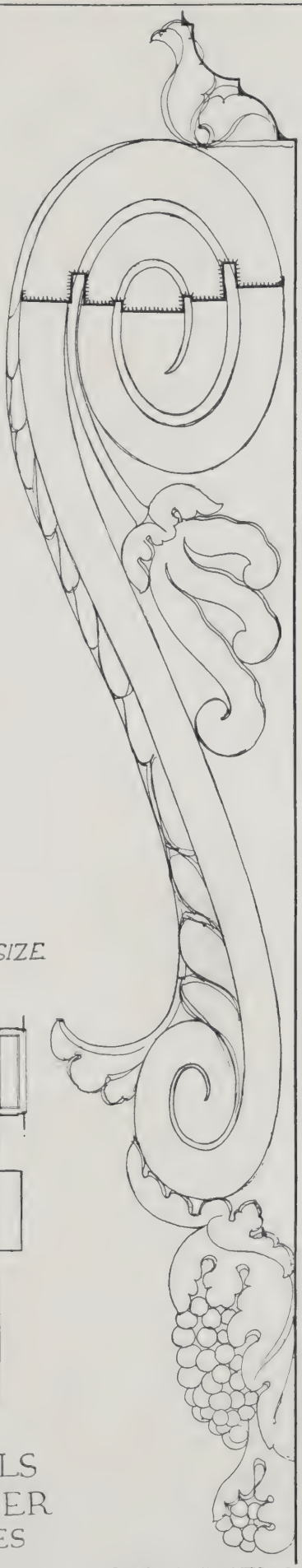
ELEVATION D~D
SALLE A MANGER
HOTEL DE CHAULNES
PARIS
Scale 3/8 = 1 Foot


SEC. 4
DETAIL AT "B"
DEVELOPED
1 3/4"
SEC. 17
SEC. 1
"B"
"C"
SEC 3
DETAIL AT "C"
SEC. 5
COVE
4"
SEC 6
SEC 7
"D"
BASE
5"
SEC. 8
SEC. 9
SEC. 19
1/2 FULL SIZE DETAILS
SALLE A MANGER
HOTEL DE CHAULNES
PARIS
DETAIL AT "D"



ELEVATION AT "P" $\frac{1}{6}$ FULL SIZE



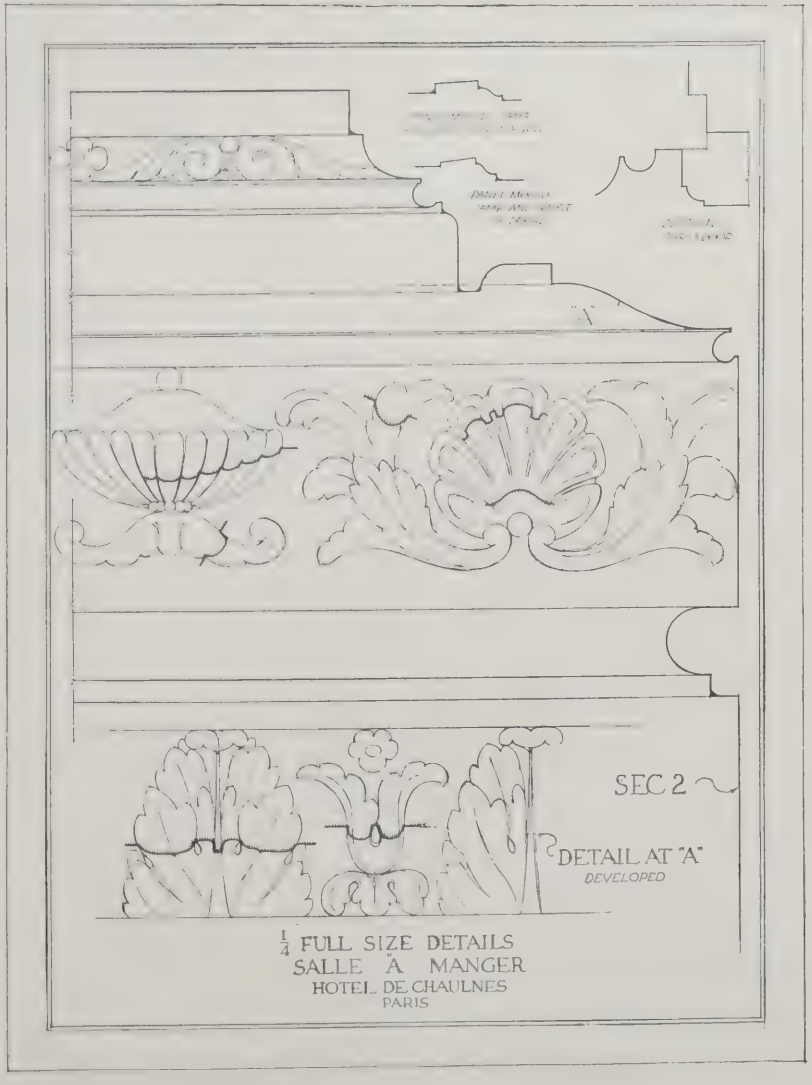


SIDE VIEW

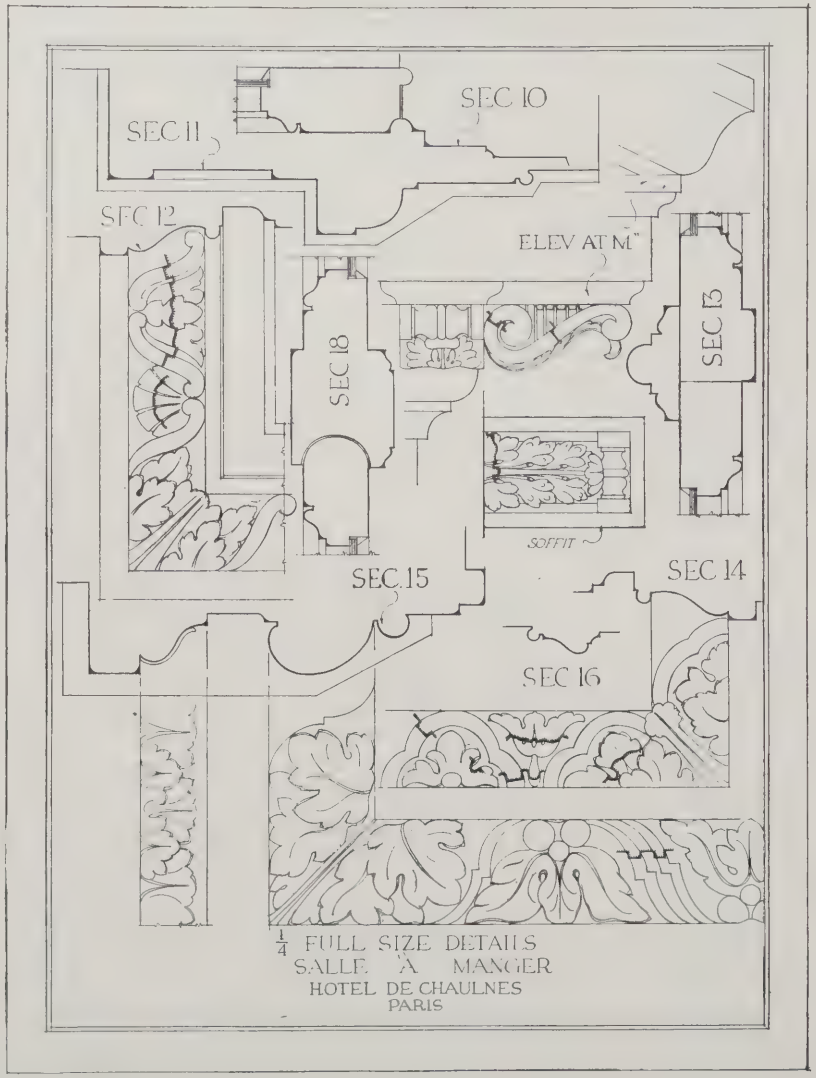


ELEVATION AT "N"

$\frac{1}{2}$ FULL SIZE DETAILS
SALLE A MANGER
HOTEL DE CHAULNES
PARIS



¼ FULL SIZE DETAILS
SALLE À MANGER
HOTEL DE CHAULNES
PARIS



¼ FULL SIZE DETAILS
SALLE À MANGER
HOTEL DE CHAULNES
PARIS

F.A.

THE ARCHITECTURAL FORUM

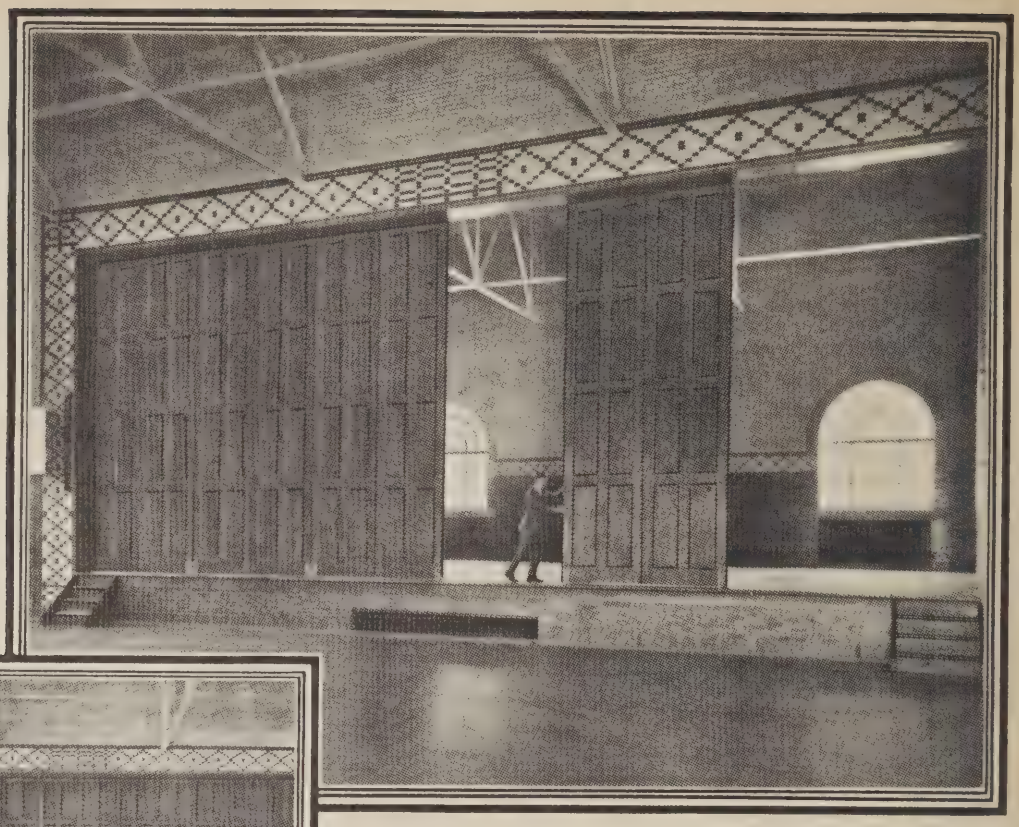


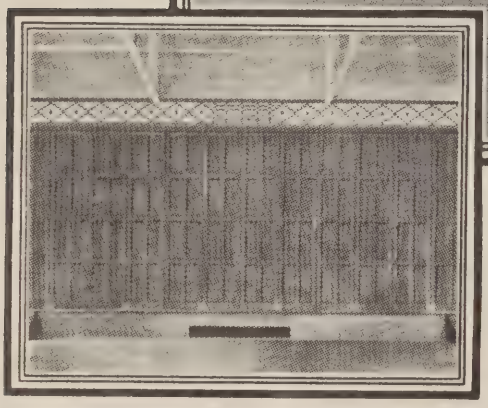
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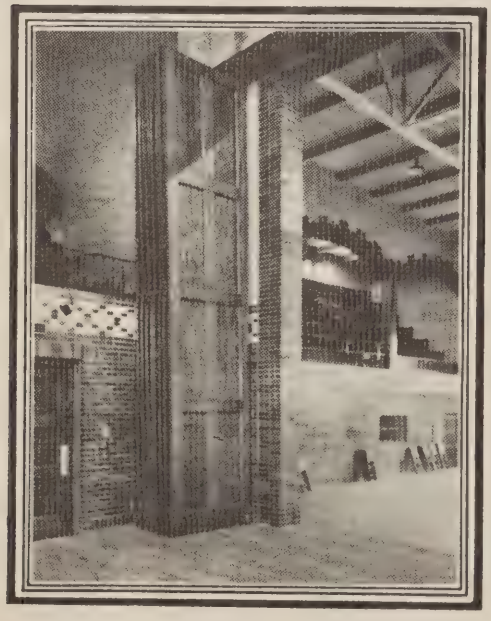
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1927







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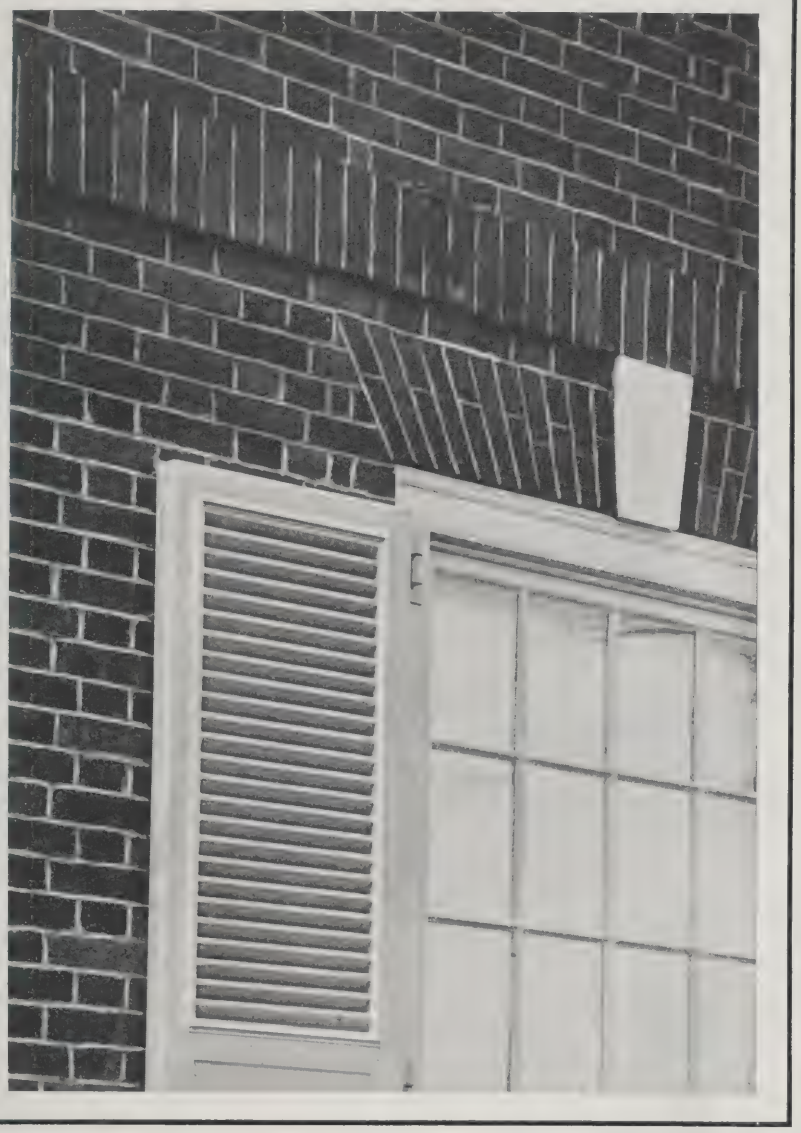
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This book was written in collaboration with The Architectural Forum

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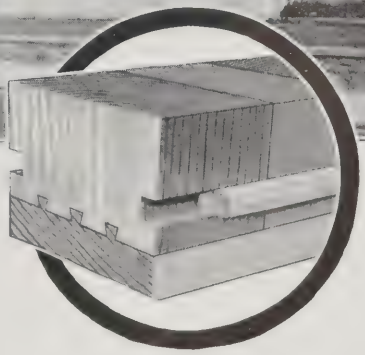
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RALPH W. HEDGES, PRINCIPAL

BRIDGEPORT, CONN.

Jan. 4, 1927

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Ralph W. Hedges
PRINCIPAL

RWH:L

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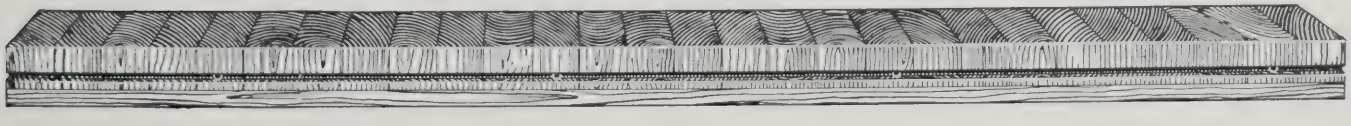
The accompanying letter explains why a large percentage of the country's better known School Architects specify BLOXONEND for gymnasiums and shops. Write for specifications and sample.

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Reg. U. S. Pat. Off.

EXTERIOR STUCCO

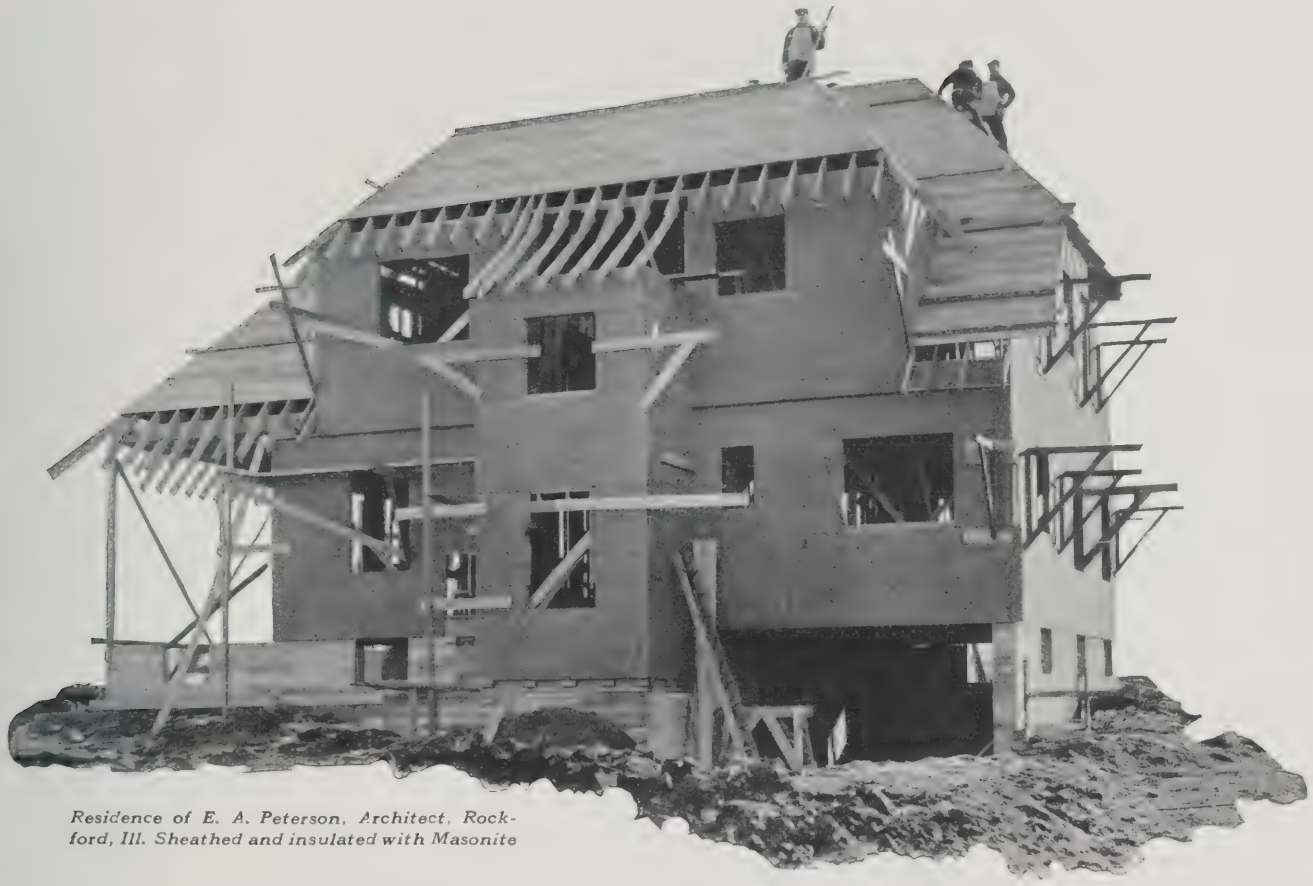
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Department 227, 300 West Adams St., Chicago, Illinois
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Please forward "How to Obtain Period Textures in Oriental Stucco" and Specification 16

Name.....

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Mr. Peterson then specified All-wood Structural Insulation *for his own home...*

AFTER carefully considering various types of insulation for his new home, Mr. E. A. Peterson, architect of Rockford, Ill., decided upon Masonite.

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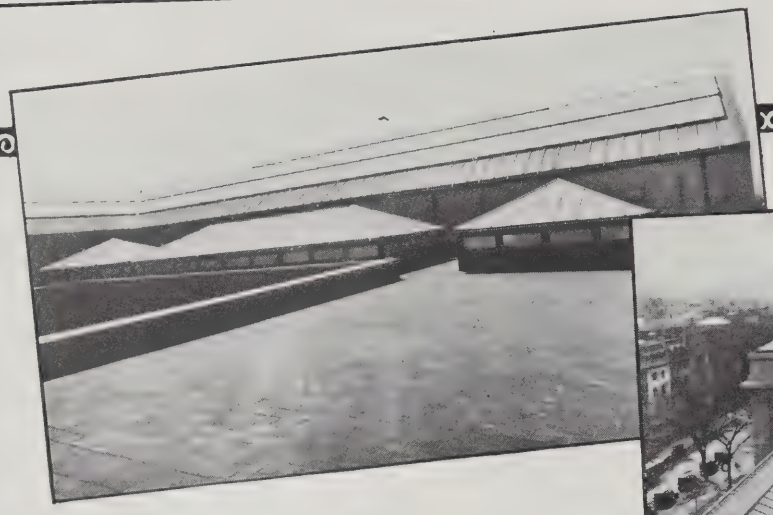
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BOOK DEPARTMENT

Later Georgian Furniture and Decoration

A Review by WALTER F. WHEELER

THE interest which attaches to study of any department of English domestic architecture and decoration is due partially to the variety of types with which the study has to do, and partially to the influence from other countries (influence generally not difficult to trace) which the types themselves present. Both these sources of interest lend particular importance and value to study of the architecture of the latter part of the Georgian era, when English architects and designers had thoroughly assimilated and mastered use of what England had borrowed or acquired from other countries during the course of the preceding centuries.



Chair of the Late Georgian Period
Illustration from "English Decoration and Furniture"

In this particular volume, part of the widely known and valuable series on English architecture and decoration by Miss Jourdain, there is reviewed work of the period 1760 to 1820, which of course is the reign of George III. Architects of the day were for the most part preoccupied with the classic; they had in many instances traveled to Rome and Athens and even to certain parts of Asia Minor to study at first hand their architectural remains, and English wealth had aided materially in carrying on the excavating of the soil of Rome and the Campagna which brought about the recovery of many treasures of antiquity. Then again the accidental discovery of Pompeii (in 1748) had aided the study of the architecture of the antique world by bringing to light treasures buried since A.D. 79 and wholly unspoiled, while the excavations at Herculaneum, begun in 1711, resumed in 1738 and continued until 1766, had added immeasurably to the accumulated wealth which lay ready for use at the willing and highly competent hands of England's architects. There is still another reason for the activity of the world of architecture during the period, since wider distribution of wealth was rendering possible the building of extremely comfortable town houses and country homes by the middle classes, the increasing luxury of the aristocracy, and building often upon a vast scale by the nobility, for each class imitated the building achievements of the class just above, and imitation or rivalry can be expressed in no way quite so effectively as in domestic architecture.

The volume deals with work of quite a number of individual architects of the period, considerable attention being given, quite naturally, to that of Robert and James Adam, leaders among the foremost architects of the era and representative of those favoring design of a highly restrained and refined classicism. While the type of design identified with the Empire as it existed in France by no means attained in England the wide vogue which it found in America, several of these illustrations suggest that it was not wholly unnoticed; perhaps its free and frank use of Roman forms and motifs recommended it to an age more than a little absorbed in study of the antique. One particular detail of the volume which of course renders it of considerable practical value for use in a present-day architect's office is its illustrating what might be called work of a "medium" order. A number of great and monumental buildings are of course illustrated, but particular emphasis seems to have been placed on work of lesser extent,—town houses of moderate sizes and country houses of the sizes and character which many architects all over the United States are building today; and in addition to the actual illustrations there are included many detailed drawings, full-sized profiles or contours of mouldings, and other items which could hardly fail to be interesting and useful to the designer. Like the previous volumes of this important series, the work is carefully written, and its thorough and accurate documentation proves intimate knowledge of the existing collections of Georgian furniture, though its wealth of illustrations probably constitutes the volume's chief interest in the eyes of architects, designers and decorators.

ENGLISH DECORATION AND FURNITURE OF THE LATER XVIII CENTURY. 1760-1820. By M. Jourdain. 269 pp. 10 x 13½ ins. Price $25. Charles Scribner's Sons, New York.

Any book reviewed may be obtained at published price from THE ARCHITECTURAL FORUM

An Authoritative Work on

"THE GREEK REVIVAL"

By HOWARD MAJOR



THE search for effective types of architecture for domestic use leads logically to the re-discovery of the style known as the "Greek Revival." In the hands of a few particularly skillful architects it is being used with marked success, their use being based largely upon study of such examples as have survived the period, just prior to the Civil War, when use of the type was widespread throughout the United States. It is an entirely American style, founded not upon a following of current English architecture but upon a study by Americans of classic types adapted to domestic uses.

Mr. Major's excellent work is the result of a careful study of the style as it was interpreted in the North and East, and particularly in the South. The illustrations of exteriors and interiors are full of suggestions for anyone seeking a variety of architecture bold, simple and effective, which supplies a fitting background for life in America. The book is richly illustrated, and shows existing work, large as well as small, in both city and country.

236 Pages; 7½ x 10¾ inches. Price $15

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HOMES OF CHARACTER. By Marcia Mead. 235 pp., 5½ x 8½ ins. Price $3.50. Dodd, Mead & Company, New York.

TWENTY or 30 years ago one familiar with architectural conditions in America might well have despaired of the American home, whether large or small. There was, just as there is today, a prodigious expenditure on building and furnishing, but expenditures were rarely if ever wisely made, and when a house had been built, equipped, decorated and furnished the owner usually had a home representing a considerable investment but having scarcely a vestige of anything which would have impressed a trained observer as indicating possession on the part of the owner of anything more than the most ordinary and commonplace taste. The house might well be comfortable, but it would almost invariably be wanting in even the smallest detail which would distinguish it from countless other equally costly homes.

The evolution of domestic architecture, now that one surveys it in retrospect, is seen to have been the result of many forces working in coördination. Soon after the subsiding of the "Eastlake" furor in the eighties and nineties, there was begun on the part of architects and interior decorators the work which in the course of time was to accomplish the change. Even today the work of a few architects of that period is found to be amazingly good, and presently the improvement was accelerated by writers on architecture and decoration who were possessed of excellent taste backed up by proper training. Manufacturers of building materials soon saw the wisdom of so directing the use of their products that they would give lasting satisfaction, and (probably due at least in part to the astuteness of advertising managers) magazines and other publications began a great campaign the object of which was to improve the standards of architecture, decoration, furnishing, and whatever else enters into the creation of a home; and this campaign is still in progress, aided much by the publication of many books on the subject, of which this is a good example.

Considerable harm has been done by careless use in writing of the word "Colonial." Some writers on architectural subjects do not seem to realize that there are several types of "Colonial,"—Dutch, English, etc., and that some of these types are subdivided into early, middle, and late. This magical word, which seems to have obtained a powerful hold upon popular imagination, is therefore being applied to all sorts of houses.

Miss Mead is a member of the American Institute of Architects and one of the best known women architects in America. Her work, particularly of a residence nature, has always been distinguished by dignity, simplicity, and due regard for the fitness of things, and particularly in the small house field by a high degree of architectural character. Her experience and achievements entitle her to write with authority regarding architecture and decoration, and this she has done exceedingly well in this excellent volume, useful to the architect and invaluable to anyone intending to build. One extremely useful detail is the inclusion of several pages of bibliography, which of course suggest further reading and study. A foreword to the volume is contributed by Daniel P. Higgins, of the Office of John Russell Pope, and much of the interest of the work is due to the inclusion of photographs and original sketches by Otto R. Eggers.

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FRENCH PROVINCIAL FURNITURE. By Henri Longnon and Frances Wilson Huard. 167 pp. 5½ x 8½ ins. Price $5. J. B. Lippincott Co., Philadelphia.

THE remarkable interest in French provincial furniture which has recently manifested itself in this country is very natural. French and American traditions have been linked since our own revolutionary times, when France lent a hand to our own struggling country. Lafayette's visit left its indelible imprint upon our life and customs. Even before the Great War, which further cemented the interests of the two countries, American collectors and connoisseurs had become aware of the charm of the furniture of the French provinces, its beauty and its adaptability to American country use. Decorators have imported this furniture extensively, and either antiques or authentic reproductions are available.

An interesting review of this rural or regional furniture of France is contained in the volume by Henri Longnon and Frances Wilson Huard entitled "French Provincial Furniture." In France this type of furnishings is called *mobilier rustique,* but in America it is better designated by the word "provincial," since "rustic" with us is associated with a very different type. This work describes the characteristics of the furniture of the various French provinces by means of a rapid geographical survey of these districts as they existed prior to the revolution of 1789. It stresses the period of Louis XV, when this furniture attained "that purity of taste and line that are the hallmarks of French genius—not only as the prototype for all Europe but certainly the *chefs d'œuvres* of the cabinet-making art throughout the centuries." "At this time," say the authors, "the entire ensemble of furniture had a general national relationship from Flanders to Provence, from Normandy to Alsace. In all French provinces people ate, slept and kept their belongings in what was very much the same manner.

But differences in climate, in habits and customs of a region made for difference in details of the furniture; that of cold, wind-swept Normandy was different from the Alsatian,—that of the mountains from that of the plains. It is with the adaptations which the national style took on in the various provinces that this book chiefly concerns itself. "Let us take the beds as an example. Their locations as well as their draperies were modified to suit local weather conditions. During the eighteenth century, wherever the climate was clement, the bed was set in the middle of the room reserved to sleep in (usually the room in which the entire family also lived and ate) and was hung with curtains of varying textures, lighter where the climate was warmer. On the other hand, in the provinces that touch the Atlantic seaboard, especially in Normandy and Brittany or mountainous regions like the Vosges, Auvergne, Dauphine and Savoie, where the climate is either damp or cold, the peasant bed was found huddled in the corner of the kitchen or carefully guarded in a more or less secluded alcove, which sometimes becomes a closet, as in the case with the Breton bed when one closes its doors. "The Breton bed, commonly called the *lit clos* (closed bed) is none other than a vast cupboard supplied with bunks one above the other as on shipboard. Here in its various compartments slept the entire household, masters and servants, men and women. Completely dressed, one crawled into this sleeping closet through the opening made by a pair of solid wooden shutters, which one immediately closed to ensure privacy in undressing, and left closed to avoid sleeping in a draft. The bed is always flanked by a chest which contains wearing apparel and which serves also as a step to the upper berth."

Differences in provincial taste are also shown in the designs of buffets. "In the bright, sunny south they have full wooden doors to protect the dishes from excessive dust. In the misty north all the household china is set on shelves in plain view, adding by its decorative gaiety a bright note to the somber interior. Fashions in feminine attire had marked influence on furniture. The simple little bonnets of Lorraine or Champagne might be tucked away on the shelf of almost any wardrobe, but those vaporous creations of lace and muslin, which so distinguished Normandy and Brittany, must, to retain their crispness, be lodged in a *bonnetiere,* a piece of furniture unheard of outside the western provinces."

But, say the authors, just as it is hard to give the precise date of the making of any piece of furniture, so it would be equally imprudent to affirm at a glance in what province it originated. "Doubtless Breton, Alsatian and Provencal furniture has certain native traits which enable one to distinguish an origin in the twinkling of an eye. In these three provinces the furniture is most typical. Elsewhere the diversity of provincial taste appears rather in the detail or treatment of ornamentation. The wardrobe, the buffet, bed, commode and table, with here and there a few rush-bottomed chairs, were the principal pieces of furniture in the French peasant home during the seventeenth and eighteenth centuries, made of "sound, salable woods, carefully grooved and joined and soberly ornamented." Naturally these took on the style best suited to the climate and customs of the various provinces. "We find it graceful, delicate and florid in Lorraine and Franche Comte, especially so in Normandy and Provence. It is simple and sober in Picardy and Champagne, while in Burgundy and the Lyonnais it assumes an amplitude that borders very closely on nobility."

THE PRACTICAL DECORATION OF FURNITURE. Volume I. By H. P. Shapland. 44 pp. of text, 48 plates, 8½ x 11 ins. Price $5. Payson & Clarke, Ltd., New York.

HISTORY of furniture closely involves the history of design as used in the way of ornament. Study of the furniture of any period or people shows the use of decoration to enhance the beauty and interest of the stone, marble, metal or wood of the furniture. This volume is the first of a series of three in which a widely known English writer and lecturer on furniture and design deals with the decorating of furniture. This particular volume discusses veneering, inlay, marquetrie, painting and gilding. Volume II, shortly to follow, covers use of mouldings, pierced work, turned work, twisting and carving, while in Volume III consideration will be given to applied work, coverings of textiles and leather, lacquer, etc. To the interest given by carefully prepared text there is added the interest given by well selected illustrations. The work possesses a high value to students of design and to makers of furniture, besides being useful to architects and to interior decorators.



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THE HOUSE OF SIMPLICITY. By Ethel Davis Seal. 286 pp., 5½ x 8 ins. Price $3 Net. The Century Company, New York.

ARCHITECTS frequently complain that even their best domestic work is marred if not quite spoiled by the mistaken efforts of owners who are themselves ignorant of interior decoration and furnishing or who entrust this important work to individuals who are equally incapable of carrying out the very definite plans which the architects presumably had in mind. In very important work, as a rule, the architect can control the furnishing and decoration, but a really wise architect will always try to have his clients themselves so familiar with this important matter that they are in entire sympathy with what is being done toward making the interiors of their homes consistent and in agreement with their exteriors. Only thus can complete success be had.

This excellent volume places due importance upon the value of simplicity in decoration and furnishing,—one of the most necessary qualities of successful work, and yet a quality often forgotten or under-valued. Miss Seal very wisely draws for illustrations upon that marvel of well directed simplicity, the "American Wing" at the Metropolitan Museum, where interior architecture and furnishings are in several instances both costly and sumptuous, but where nevertheless there is created an effect of graceful and refined simplicity which might have been quite spoiled had the work been done by someone whose chief aim was to make the rooms contain as many things as possible at the greatest possible cost. The volume, which is made up chiefly of matter which has already appeared in *House & Garden, The Ladies' Home Journal* and other publications, is perhaps better fitted for the use of the clients of architects than for that of architects themselves, and it is in view of this that the work is reviewed here and its great helpfulness noted. The work may well be recommended to clients.

GLASS AND GLAZING; By Emanuel E. Ericson. 146 pp., 5½ x 7½ ins. Price $1.75. The Manual Arts Press, Peoria, Ill.

THE great strides glass making has made since it was discovered, may be seen everywhere, in the stained glass in cathedrals and churches, the many drinking vessels made of glass, and the plate glass windows in stores and the window glass in our own homes. This book has been written with the needs of the amateur worker in mind, and such highly technical material as would interest only the experienced professional glazier has been omitted, being useful, nevertheless, to both worker and general reader. A chapter is devoted to the kinds of glass used in building construction, giving the characteristics and strengths of plate and window glass; and it will be most useful to architects and builders. The comparatively more recent invention of wire glass, a kind of reënforced glass, is dealt with. A most interesting chapter is one on the making and treatment of mirrors, the process followed, and the standard formulæ used for making silvering solutions. This book is profusely illustrated with drawings and halftones, showing the various operations described, and the explanations are given with painstaking detail and the work is based on practical shop experience. The subject is so carefully presented that an amateur can follow the instructions without difficulty.

"The Spanish House for America"

By Rexford Newcomb, University of Illinois



THE undoubted charm of the simpler type of Spanish architecture is due largely to its close relation to the soil. Set close to the ground, and built as a rule of brick, stucco, adobe, or some other material directly of the soil, Spanish domestic buildings have the appearance of belonging in a particular sense to the places where they stand. The simplicity which characterizes their structure is equaled by the simplicity of their design, always given in Spain a direct, naïve quality, which the early Spanish settlers in America secured when they began colonizing and building in Florida, California, and the other regions in America where they were the pioneers. The simple grace and charm of their buildings are being equaled today, and some of the most strikingly successful of recent domestic work owes its excellence to this following.

IN this volume an architect and professor of architecture deals with the most successful adaptation of Spanish domestic architecture in the sunny parts of America where its use is most appropriate. Disregarding the extremely ornate work, where the simplicity of the type is ruined by over-elaboration, he presents the American following of the early Spanish style in its most charming aspect. The work deals with the design of the house; its *patio* and general plan; its construction, decoration and furnishing; and one of the most helpful parts of the volume discusses the various forms of craftsmanship which aid in giving the strong character upon which such buildings largely depend. The volume is also helpful because of its including illustrations of the exteriors and interiors of houses built by the architects who are leaders among those successful in use of the Spanish style.

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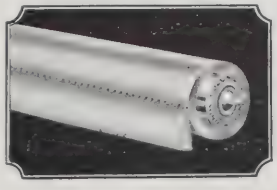
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CONTENTS *for* MAY 1927

PLATE ILLUSTRATIONS	Architect	Plate
Ziegfeld Theater, New York	*Joseph Urban & Thomas W. Lamb*	81-83
Wilshire Boulevard Congregational Church, Los Angeles	*Allison & Allison*	84-88
The Breakers, Palm Beach	*Schultze & Weaver*	89-96
The Forum Studies of European Precedents (Plates 73-80)		

LETTERPRESS	Author	Page
Cover Design: A Gateway in Siena *From a Sketch by P. R. Wilson*		
The Editor's Forum		71
The Deanery, Winchester *From a Crayon Drawing by Otto F. Langmann*		*Frontispiece*
Architectural Heritage of New Orleans	*William P. Spratling*	409
Ziegfeld Theater, New York	*Joseph Urban & Thomas W. Lamb, Architects*	415
The "Parthenon," Nashville	*Russell E. Hart, Architect*	433
The Breakers, Palm Beach	*Schultze & Weaver, Architects*	453
Formal Entrance Courts	*Ruth Dean*	473
The Building Situation		478
The Architects' Forum — What Does the Architect Owe the Manufacturer?		479

LETTERPRESS	Author	Page
Office at Russell Gardens, Great Neck, N. Y.		481
Real Estate Office at Great Neck, N. Y.	*Frank J. Forster, Architect*	483
Office at Kenilworth, Great Neck, N. Y.	*Patterson & Willcox, Architects*	485
Building for Canterbury Realty Corporation, Great Neck, N. Y.	*James Macpherson, Architect*	487
Office and House of Thomas J. Good, Pelham Manor, N. Y.	*Arthur Purdy, Architect*	489
Real Estate Building at Larchmont, N. Y.	*E. D. Parmelee, Architect*	491
Office of The Homeland Company, Hastings, N. Y.	*Joseph Emmett Kelly and William Cain, Architects*	493
Office at Fox Meadows, Hartsdale, N. Y.	*Andrew J. Thomas, Architect*	495
Mantel, Stephen Putnam House, Danvers, Mass.	*Henry Noyes Otis*	497
Parlor Mantel, Gen. McLellan House, Topsham, Me.	*A. J. Harriman*	499
Mantel, Valentine House, Bronxville, N. Y.	*Boyd Hill*	501
Entrance Porch, Wheeler-Beecher House, Bethany, Conn.	*Myron Bement Smith*	503

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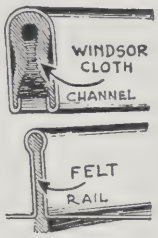
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Athey Cloth-Lined Metal Weatherstrip

A Perfect "Seal" for Both Wood and Metal Windows

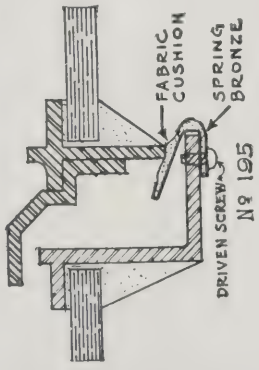


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THE EDITOR'S FORUM

TRAVEL IN EUROPE

ANNOUNCEMENT is made of a summer travel course in Europe for students in architecture and landscape architecture, conducted by the Cambridge School of Domestic Architecture and Landscape Architecture, and the Lowthorpe School of Landscape Architecture, of Groton, Mass.

The Cambridge and Lowthorpe Schools, believing that the ideal professional course for architects and landscape architects should include three months of directed study in Europe each year during the students' school careers, and realizing that such a requirement may well be made by schools in the not distant future, offer this year their first summer travel course in Europe, including travel in England, France and Italy. The course is for women students only. It is open to those who are interested professionally in architecture and in landscape architecture, whether they are at present studying in any school, are contemplating such study, or are in office practice. On the principle that the first summer course should be followed by others, during which the more advanced students' efforts would be concentrated on the work of particular countries or periods, the course for 1927 will be conducted as an ideal course for students about to enter professional studies and for those who have completed one year of such studies. The party will sail from Montreal on June 10, and its return to New York is scheduled for September 17 or 18. Communications regarding the summer tour should be addressed to Henry Atherton Frost, 13 Boylston Street, Cambridge, Mass.

FROM THE A. I. A.

FOR over a year the Board of Directors of the American Institute of Architects has been engaged in a study of the organizational and administrational forms of the Institute, with a view to their simplification and better coördination, and a special committee has been similarly engaged in a comprehensive study of certain functions of the Institute, one of which is the publication of the *Journal*. At the meeting of the Executive Committee in New York on February 25 it was learned with much regret that an impression appears to have gained ground that the Institute has the intention of discontinuing publication of the *Journal*, and that another, privately owned architectural publication is to become the official organ of the Institute. The Executive Committee has therefore instructed the Secretary of the Institute to ask that publishers of the architectural publications be requested to say that these rumors are without foundation. On the contrary, the Board of Directors is at work upon a plan to considerably enlarge and materially expand the *Journal*.

THE ARTS COUNCIL

IN New York, leaders in the arts and in education have reached the realization that a clearing house for the arts would be of great value if maintained through one central headquarters, where each existing art society, small or large, might enjoy equal representation and equal opportunity of taking part in furthering the broad influence of the arts in everyday life. An Arts Council of New York has been organized with a self-perpetuating board of trustees, including John G. Agar, John H. Finley, Mrs. John W. Alexander, Ernest K. Satterlee, Harvey Wiley Corbett, Otto H. Kahn, Kate Oglebay, and Florence N. Levy, who is also executive secretary. The Council, the formation of which was due largely to the initiative of the National Academy of Design and the Architectural League of New York, is developing its work through three groups, devoted to design, drama, and music, and during its two months of existence it has proved valuable.

A series of lectures on "Art in the Day's Work," organized by the Council and given by Gerrit A. Beneker, portrait painter, reached nearly 6000 individuals in 20 lectures, during February, 1927. It organized 500 students for attendance at the 1927 Architectural and Allied Arts Exposition, the students being conducted through the huge building under the auspices of the School Art League. It has also been instrumental in crystallizing a movement to have the unused class rooms of Public School No. 6 equipped for studio and class work in the arts. This school is in close proximity to the Metropolitan Museum of Art. Practical relations have been established with 400 shop teachers, 37 high schools, and 54 neighborhood settlements, and by request of the Fine Arts Federation of New York, it obtained action among its affiliated organizations, forwarding resolutions and personal letters appealing to Governor Smith to retain the State Fine Arts Commission in its present form, much change being threatened.

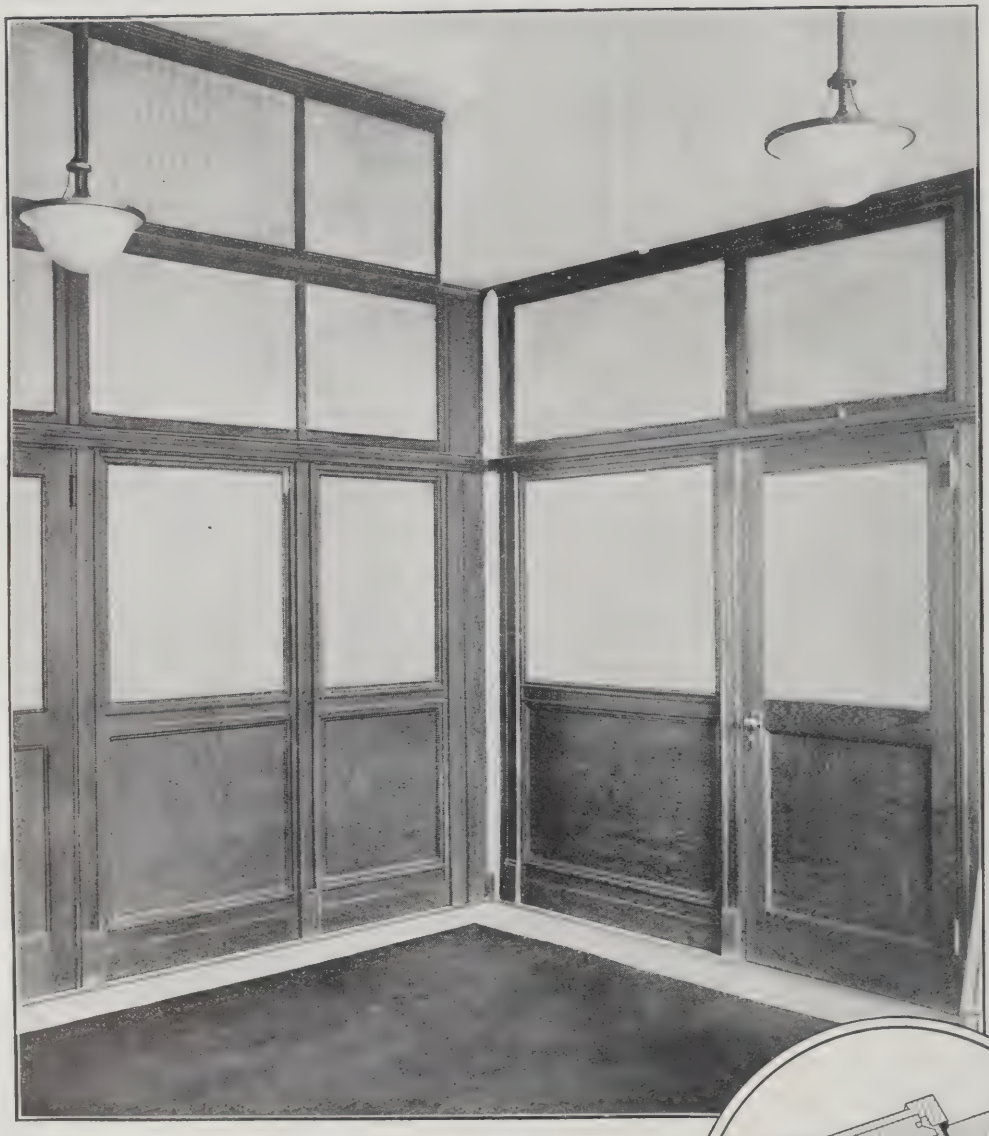
THE LE BRUN SCHOLARSHIP

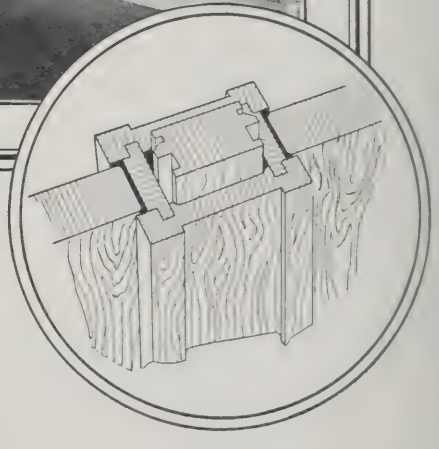
ANNOUNCEMENT has been made of the results of the 1927 competition for the Le Brun Traveling Scholarship. The winner is Earl C. Norris, of Denver. First mention went to W. Ray Winegar, Detroit; second mention to Emil W. Klee, New York; third mention to Martin Beck, Astoria, N. Y., and fourth mention to Henry A. Cook, of New York. Maurice Gauthier, Brooklyn, and Albert W. Butt, Jr., New York, were specially commended. The judges, all members of the New York Chapter of the American Institute of Architects, Egerton Swartwout, Julian Clarence Levi, and Richard H. Dana, Jr., made these awards some time ago.

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From a Crayon Drawing by Otto F. Langmann

The ARCHITECTURAL FORUM

Volume XLVI MAY 1927 Number 5

The Architectural Heritage of New Orleans

By WILLIAM P. SPRATLING

THE fame and charm of old New Orleans are sufficiently well known in this country and abroad, but it is believed that there is yet to appear a really satisfactory work on the city's architecture itself which may be considered an accurate record of this most interesting phase of the early architecture of this country. Year by year these crumbling remains of an old world heritage continue to disappear with alarming rapidity before the commercial demands of a city growing in importance.

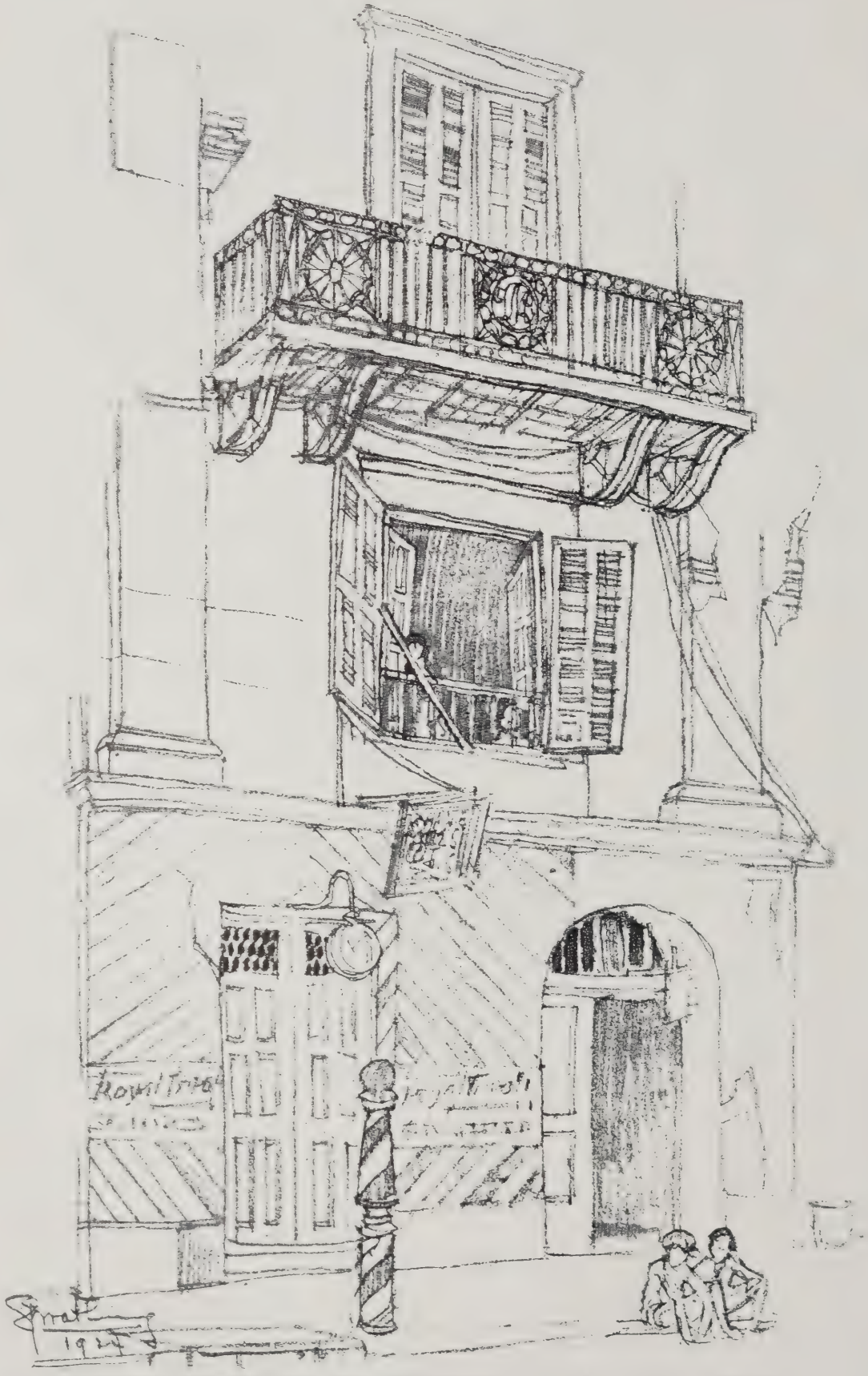
Established in 1718 as the capital of France's possessions in the new world,—the province of Louisiana was at that time an empire in itself,—New Orleans' two centuries of existence form vivid and romantic history. In 1762 the city passed protestingly into the hands of Spain. Though always essentially French, she remained a Spanish possession until ceded back to France in the year 1800. France had hardly reclaimed the province when the Louisiana Purchase was effected in 1803. In reviewing its history thus one is better enabled to understand the importance and scope of the French and Spanish influence which have fixed its character.

Nouvelle Orleans was originally a fortified and moated town of some ten blocks in length, from Canal to Esplanade, and six from the river to Rampart. At first composed of only a few rude wooden dwellings, it was not until after the great fire of 1788, from which a mere handful of buildings escaped, that it became a city of brick and stone and Spanish tile. It is interesting to note that the use of tile was at this time encouraged by the governor, Carondelet, who offered a premium on the houses thus safeguarded against another fire. The city which arose from the ashes was one of cool courtyards, brick arches, broad fanlight windows, and galleries and balconies of lacy ironwork, a city of real dignity and beauty. Today, located in the center of a large commercial district, the little French quarter, the *Vieux Carre,* offers, if one will but look with kindly eyes upon the dejected remains of a once lovely and graceful period, a wealth of suggestion to architects interested in old French types.

In the old days life in the quarter centered around the *Place d'Armes,* which is now Jackson Square. Royal and Chartres Streets comprised the main business district, though Royal Street was always the chief thoroughfare. Above Canal were plantations and wilderness. Starting from Canal Street one's best route for a walk is to proceed down Royal Street. The first three blocks are fairly well filled with antique shops, which, as the guide book informs us, are another reason for New Orleans' fame, and are supposedly filled with relics and adornments of old Creole families. In this street are a number of buildings of first importance, and the finest of the courtyards for which New Orleans is best known are to be found in this locality. The "Dome," at Royal and Conti, and the Morphy house are in the same block, the latter being originally the first Bank of Louisiana. A block and a half farther down is the Brulatour mansion, now occupied by the Arts and Crafts Club, and in the next block the historic "'Sieur George's Legacy," now called the first skyscraper. It is said that at the time it was built people predicted a catastrophe for such a tall building. It contains just four stories!

Facing Jackson Square is to be found the old St. Louis Cathedral, erected in 1789 on the site of the little church first built by Bienville and the early settlers and the first thing to be located in the original plan of the city. The two sides of the square are flanked by the splendid Pontalba Buildings,—in their day the finest apartment buildings in America. In the near vicinity are to be discovered innumerable fine old houses, some of them now serving as grocery stores and the like, but nevertheless still possessing something of their original grandeur in beauty of proportions and charm of old ironwork. Also very near are the French Market (the *Halle des Boucheries*), the famous "haunted house," "Madame John's Legacy," the Archiepiscopal Palace and many other important buildings.

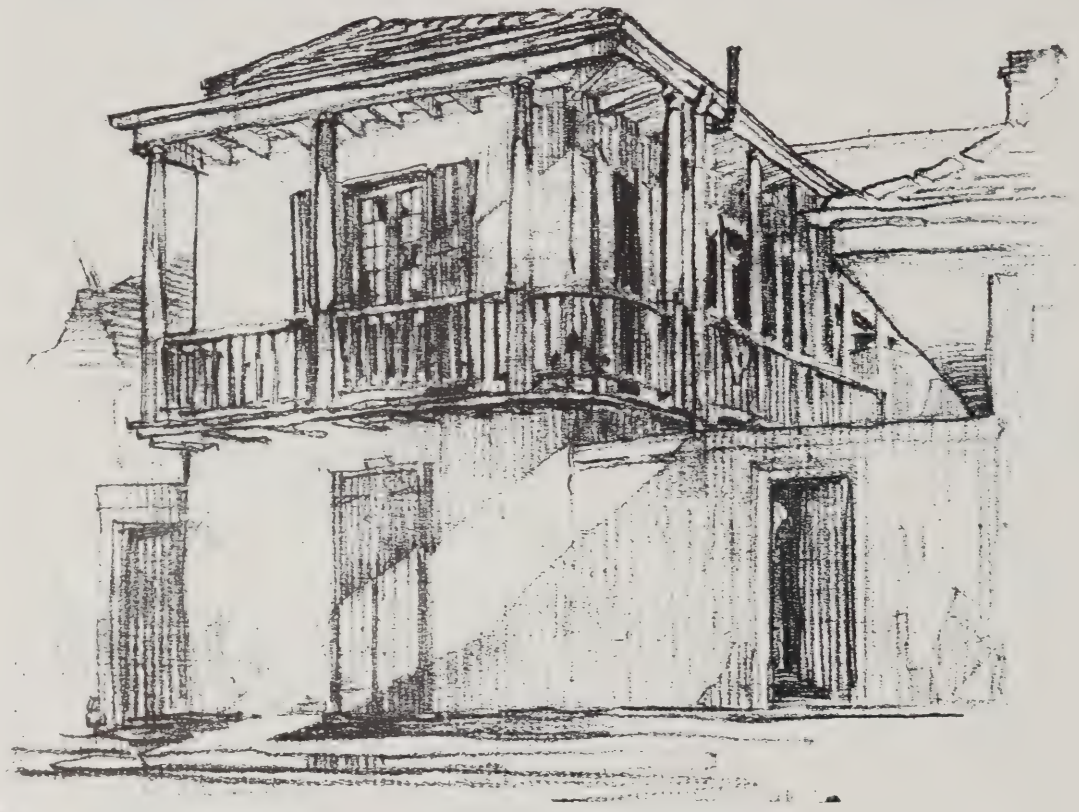
In studying the facades of some of the older buildings, which at a glance may seem to be very plain, attention should be called to the extraordinary refinements practiced in the proportioning of openings and the disposition of story heights. There are some houses in St. Peter Street and again in Chartres Street near Madison which are notable for this. Brick was everywhere used, and of course, as large building stones were not to be had, the brick



MAISON LEMONNIER, THE FIRST NEW ORLEANS SKYSCRAPER, ROYAL STREET



OLD DOORWAY ON TOULOUSE STREET, NEW ORLEANS



A Walled Courtyard and Overhanging Balcony in the Vieux Carre

arch was employed. The arches vary from the simple rounds of entrance doorways to graceful elliptical fanlights overlooking the courtyards. Of these latter one recalls a particularly beautiful pair in Toulouse Street, each having a span of 17 feet.

Practically every old house has its court or patio, no matter how tiny. Usually the rear of the court is bounded by the slave quarters, the narrow balconies of which rise tier on tier and when seen from beyond the court appear tall, thin and chisel-shaped. The courts are flagged with stones which we are told came over in ballast, and the story is probably just as likely as that regarding English bricks in Virginia. In the courtyards are found luxuriant palms, oleanders and banana trees. Occasionally the center is graced with a bit of statuary or a fountain. It is most interesting to view the interior of a block from the roof tops, from where the grouping of chimneys, quaint dormer windows, the broad fanlight windows overlooking flagged courts full of tropical growth, and particularly the queer, tall masses of the slave quarters present a spectacle entirely out of the ordinary and not to be equaled in America.

The *rez-de-chaussee* or ground floor of one of these old homes was commonly devoted to commercial purposes, and the residential quarters were above, an idea distinctly European. As a result, the entrance to the house proper was often through a passage which led through the entire length of the house back to the court. This passage, in one of the less pretentious houses, is a mere narrow alley, while in the mansions are to be found spacious driveways large enough to accommodate carriages. At the end, and usually ascending from a sort of open hall or loggia, is the staircase, a feature which was always nobly planned and well executed. The stairways are notable not only for their beauty of line but for cleverness of construction. It is remarkable that they are invariably supported without centering, the majority being of the winding type, and they have remained perfectly sound and substantial through all the years. The arrangement of the stairs in the old *Hotel des Etrangers,* now in the last stages of decay, is well worth a trip to see. They are symmetrically placed, semi-exterior, and the rails are beautifully turned. The plaster detail in many of these old houses deserves much attention. Moulded centerpieces of great delicacy and richness are common, and the detailing of the cornices is always good. The mouldings, whether in wood or plaster, usually show refinement and vigor.

It has only been in comparatively recent years that New Orleans has lost the old St. Louis Hotel and the French Opera House, the latter so dear to her heart. Both are practically irreplaceable. Besides these there have been many other fine old buildings to pass almost without notice. Occasionally there is published an article on one of these old structures, though but rarely. The old Exchange Bank on Toulouse Street is but one example.



Interesting Roofs and Dormers in the French Quarter

The loveliest of the old streets is Esplanade. Stretching along the northeast side of the quarter from the Mississippi to the Bayou St. John, where Bienville and his engineers landed, it is broad and shady with a strip of grass with palms and shade trees down the center its complete length, and lined on either side with fine and stately old mansions. Among them are to be found some of the most wonderful old houses in New Orleans, and so far they are practically free from the invasion of commercialism. At the foot of Esplanade, at the river, is the old mint, built in 1835 on the site of old Fort San Carlos, the same from which General Andrew Jackson reviewed his troops before the victory of Chalmette. Near the other end of Esplanade and along the Bayou are a number of fine old plantation houses of wood with stuccoed brick piers of the type of "Madame John's Legacy" on Dumaine Street.

Of the Colonial period and of course of the Greek Revival there are a number of examples in New Orleans. The Grima house on St. Louis Street is by far the most noteworthy, and to be done justice it should be made the subject of a monograph. Illustrations of the exterior of this house and of the garden in the court have appeared in publications before this, but so far the interior, which is very well done, has been neglected as a source of architectural information. Farther down town in the French Quarter is a remarkable old house at Barracks and Dauphine Streets with a beautiful Colonial entrance. Also on Barracks Street near Rampart is a really unique example, apparently little known, which is built of solid granite and includes a wonderful granite stairway with mahogany rail and bronze newel of excellent Empire detail.

But it is useless in such an article as this to go into detail over things that are most delightful when discovered for oneself, or in print only when accompanied by adequate illustrations, measured drawings and the like. Also, for the same reason, it is impracticable to go into the subject of ironwork here the way it should be gone into. New Orleans possesses a tremendous amount of wrought and cast ironwork, much of the former being of Spanish workmanship. The cast iron, of course, belongs to the nineteenth century, and there are literally hundreds of patterns to be discovered. The balcony rails and grilles, bearing the monogram of the Baroness Pontalba, from the Pontalba Buildings, and the gates and the other features from Jackson Square, which are contemporary, being done about 1848, are probably among the best of this work. But the wrought iron of the Cabildo, and of the monograms, rails, brackets, etc., to be discovered not only in Royal and Chartres Streets but in the most unexpected places, is really exquisite and valuable.

Today, in spite of the influx of emigrants and the rush of modern commerce, the *Vieux Carre* preserves the charm and color and the language of its traditions. Yet it has been only recently appreciated.



PRELIMINARY STUDY, ZIEGFELD THEATER, NEW YORK
JOSEPH URBAN & THOMAS W. LAMB, ARCHITECTS

The Ziegfeld Theater, New York

JOSEPH URBAN & THOMAS W. LAMB, Architects

EDITOR'S NOTE. Mr. Joseph Urban has long been so famous for his marvelous stage settings and for the bewildering productions which he has made at the Metropolitan Opera House that few have realized that he is an architect, and that it is as an architect he is chiefly known in Europe. In designing the Ziegfeld Theater he embraced an opportunity which afforded wide scope to his ability as an architect as well as to his skill as a decorator and designer, the opportunity made particularly attractive by reason of Mr. Ziegfeld's well known taste and his enthusiasm for what is best and most unusual in the theater and its architecture.

THE building of the Ziegfeld Theater introduces a new note in theater planning and construction. Departing from the usual custom of erecting a theater without regard to the kind or form of amusement which may be offered within its walls, the Ziegfeld Theater has been planned for a definite purpose, to house the lighter forms of dramatic entertainment, opera comique, musical comedies and revues. Consequently every effort has been made to create a wholly harmonious background for the productions contemplated. Considered from without, the playhouse is unlike any other in New York. The facade clearly expresses the purpose of the building. The auditorium is indicated by the bow on the avenue side, and the stage is represented by the ornamentation of the false proscenium. Two large masks, the conventional dramatic symbols of comedy and tragedy, are used at the sides of this proscenium opening. Thus the intent of the building is apparent to the passerby, marking the structure clearly as a temple devoted exclusively to the drama.

The widely used fan shape in theater planning is a section of a circle, and as such is only part of the perfect architectural form. It can never assume the æsthetic form of a room. The nearest approach to the form of the ancient theater which this building lot permitted was an elliptical ground plan. The ellipse was rigidly adhered to throughout in spite of all difficulties, and is only interrupted at the proscenium by a very slight opposing curve which projects over the orchestra. This curve allows a small forestage, or "apron," with doors at both sides through the proscenium arch. This arrangement permits of greater variation of scenic combinations, allowing encores or shallow scenes to be played on the apron in front of the drop curtain, while the main stage is being utilized for scene changes. With the proscenium doors for entrances and exits, the closed curtain not only accelerates the *tempo* of the production but, what is more important, it puts the artist in intimate touch with his audience. He is no longer a dim figure, lost in the atmospheric background; he is in the same room with his listeners. This idea of the forestage, which of course has been adapted from the original Shakespearean stage, should be particularly emphasized for the presentation of drama. In this way actors may play intimate or dramatic scenes close to the spectators, the suggestion of a beautiful background helping to put the audience in the mood of the scene, yet with the actors so close that the background can only be a help and never detract from the dramatic values or the intimacy of the scene. Entire epilogues, prologues, small scenes and sometimes whole acts, especially as in French drama, can be played here. The acoustic and optical advantages of this stage arrangement need not be dwelt upon, and the effect of the action upon the audience cannot be doubted. The two sides of the proscenium merge in soft curves from the elliptical auditorium into the proscenium opening, so that the stage and the auditorium melt into each other, bringing the stage picture into an unusually close, intimate relation with the auditorium.



Photos. Tebbs & Knell, Inc.

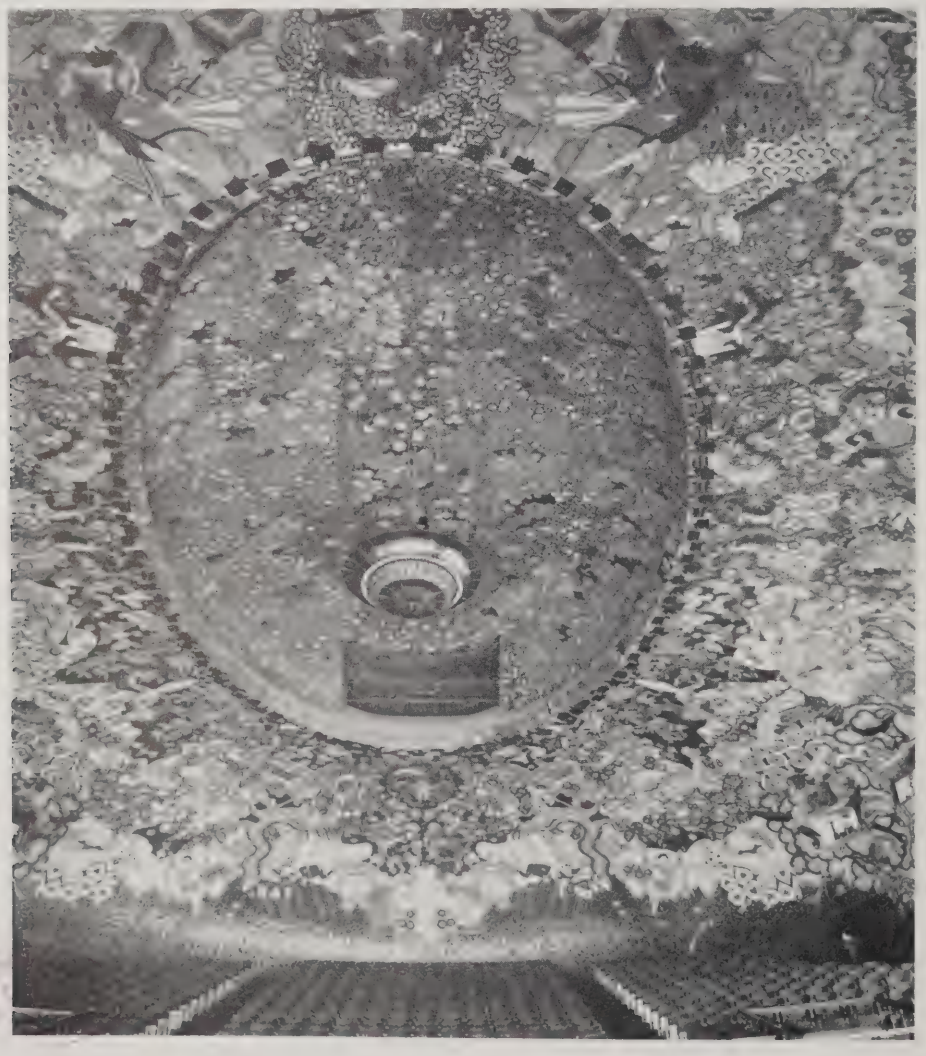
Lounge, Ziegfeld Theater, New York

The closer the contact between the players and the audience, the more festive the mood and the more the audience feels itself part of the whole occasion. Therefore the decoration of this particular theater is a part of the gay, colorful happenings on the stage, and not, as is usually the case, a stiff, architectonic affair which coldly and disdainfully withdraws from the stage picture. The auditorium should join the play; and when everything laughs and scintillates in the brilliance of the stage, the entire auditorium should share in the laughter, and with its own brilliance help carry the

mood to its peak. For decoration reliance has been placed upon the blending of the tone of the carpet and chairs with the main decoration, the mural painting, which, by the way, is the largest oil painting in the world, the famous painting of the Sistine Chapel being nearest it in size. The mural was executed by Lillian Gaertner and the Urban Studios, at Yonkers. The general motif of the mural is the "Joy of Life." The painting of the auditorium has no tale to tell, no continuous action as its basis. Under a roof of flowers and foliage, among castles and hamlets, on meadows and in wood, hunting, laughing, running, leaping, music-making, singing, kissing, loving,—human beings in mad, happy medley,—no deep meaning, no serious thoughts or feelings,—only joy, happiness,—a veritable trance of color.

The foyer is designed to obviate the necessity of patrons' leaving the building during intermissions. Ascending wide stairways from the entrance to the theater, one enters the foyer which follows the bow on the Sixth Avenue side. Entrances lead off the foyer to the various coat rooms and retiring rooms.

The stage equipment, while the most modern and complete in America, is designed to accommodate the many changes that will doubtless come with greater and more sumptuous productions. The stage has been designed with a flexibility that will permit of improvements from time to time as new methods are discovered and new accessories invented. There is a built cyclorama, 59 feet high, which will allow of unusual sky effects. There are only two or three of these plaster "domes" in the city, producers as a rule being content with "wrinkles" in their sky. The floor of the stage has been so arranged that traps can be fixed at a moment's notice at any point. The orchestra floor is constructed of a special wood, selected for its resonance. Few theaters anywhere in the world are as well equipped with electrical appliances. The switchboard is built on the principle of a pipe organ, where the operator of lights can play his symphonies of light and color with all the deftness and finesse of an organist. There is also an automatic set of switches which may be set before the performance, fulfilling their function on mechanical cues. A new departure is in installing openings for lights at the right and left of the proscenium. These will permit operators to throw lights from three levels.



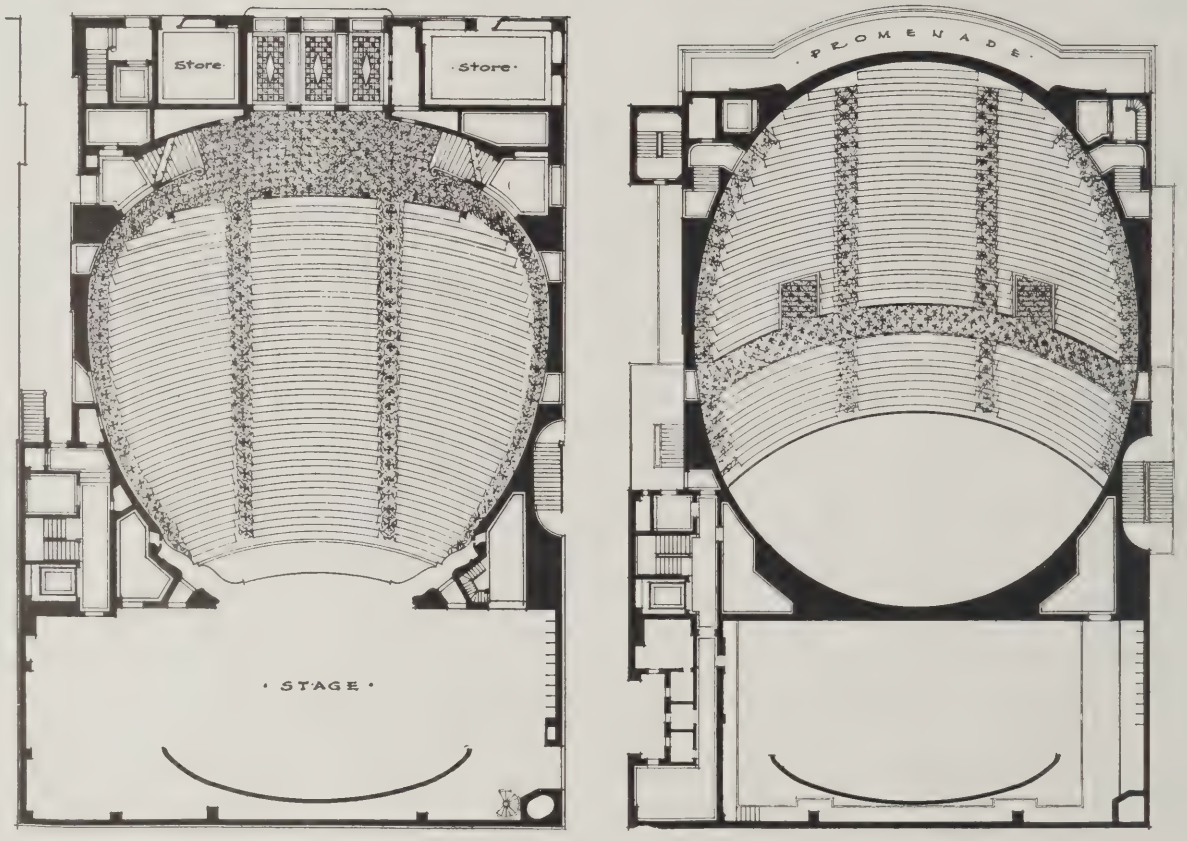
Detail of Ceiling, Ziegfeld Theater, New York
Joseph Urban & Thomas W. Lamb, Architects



Photo, Wurts Bros. *Plans on Back*

ZIEGFELD THEATER, NEW YORK

JOSEPH URBAN & THOMAS W. LAMB, ARCHITECTS



ORCHESTRA

BALCONY

PLANS, ZIEGFELD THEATER, NEW YORK

JOSEPH URBAN & THOMAS W. LAMB, ARCHITECTS

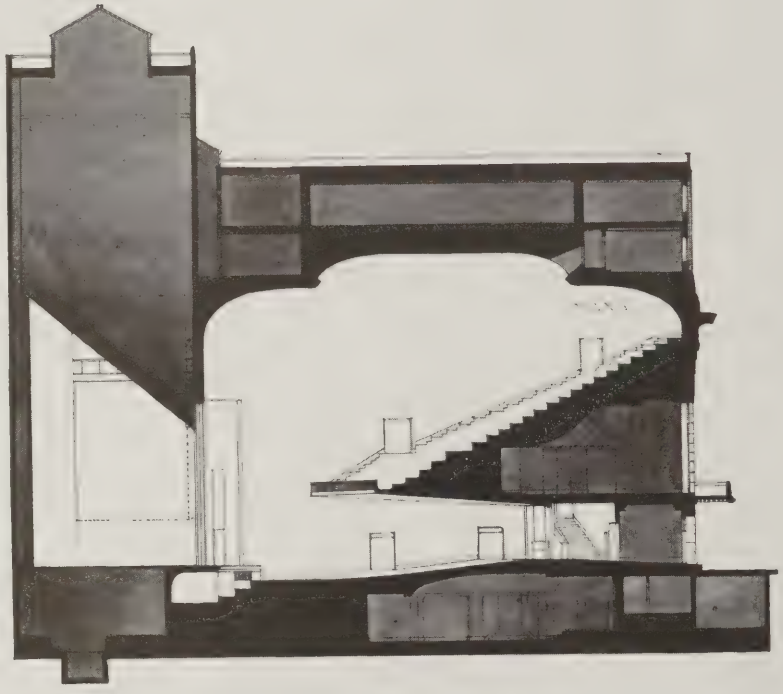


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DETAIL, PROSCENIUM ARCH

ZIEGFELD THEATER, NEW YORK

JOSEPH URBAN & THOMAS W. LAMB, ARCHITECTS



SECTION, ZIEGFELD THEATER, NEW YORK

JOSEPH URBAN & THOMAS W. LAMB, ARCHITECTS



ORCHESTRA AND BALCONY

ZIEGFELD THEATER, NEW YORK

JOSEPH URBAN & THOMAS W. LAMB, ARCHITECTS

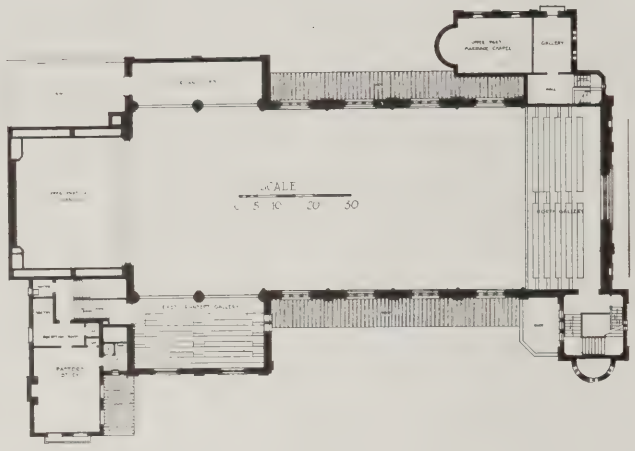


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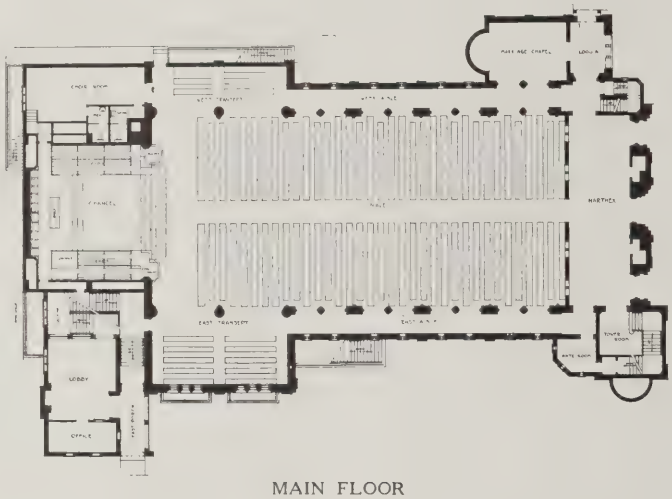
Plans on Back

WILSHIRE BOULEVARD CONGREGATIONAL CHURCH, LOS ANGELES

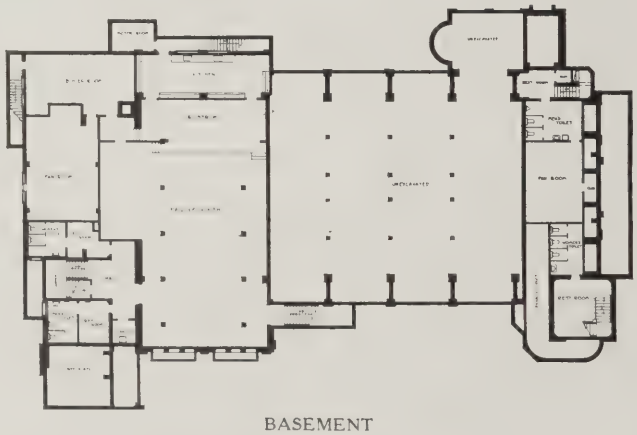
ALLISON & ALLISON, ARCHITECTS



GALLERY



MAIN FLOOR



BASEMENT

PLANS, WILSHIRE BOULEVARD CONGREGATIONAL CHURCH, LOS ANGELES

ALLISON & ALLISON, ARCHITECTS

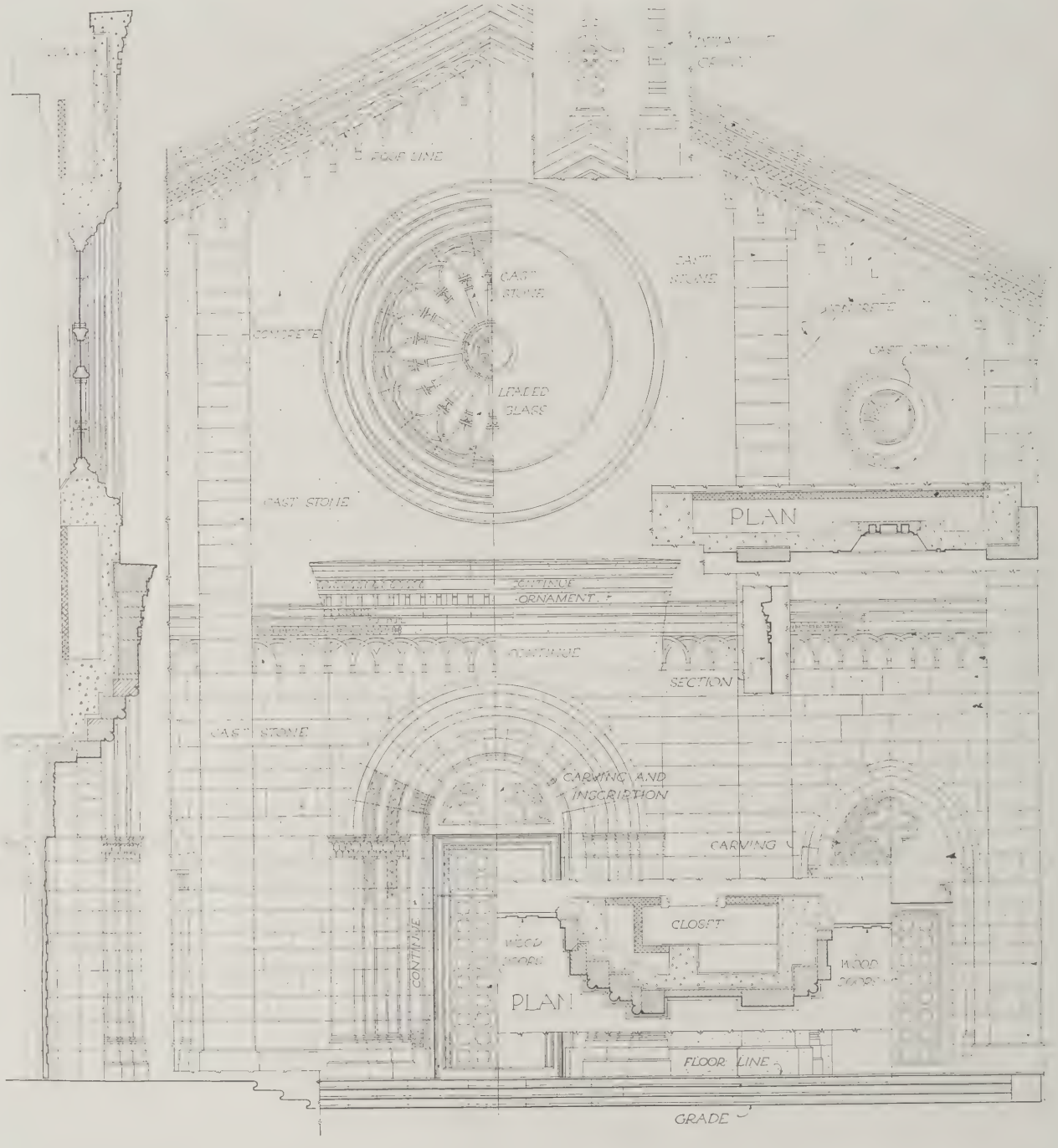


Detail on Back

ENTRANCE

WILSHIRE BOULEVARD CONGREGATIONAL CHURCH, LOS ANGELES

ALLISON & ALLISON, ARCHITECTS



SECTION ELEVATION

DETAIL OF ENTRANCE

ALLISON & ALLISON, ARCHITECTS LOS ANGELES, CALIFORNIA

0 5 10 15 20 25

SCALE IN FEET

NO 27



NAVE

WILSHIRE BOULEVARD CONGREGATIONAL CHURCH, LOS ANGELES

ALLISON & ALLISON, ARCHITECTS



CHOIR AND PULPIT

WILSHIRE BOULEVARD CONGREGATIONAL CHURCH, LOS ANGELES

ALLISON & ALLISON, ARCHITECTS



CHAPEL

WILSHIRE BOULEVARD CONGREGATIONAL CHURCH, LOS ANGELES

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The "Parthenon," Nashville

RUSSELL E. HART, Architect

THAT the approach to the problem of restoring the "Parthenon," in Nashville, was hedged about with more than the usual number of difficulties attendant on such projects was due to several causes. There was nothing lacking in determination on the part of the Nashville Board of Park Commissioners, having jurisdiction, to execute the work, for this had been arrived at gradually but surely over a period of years and was brought to final consummation by the unsafe condition of the old building, which had stood on the site since the holding of the Tennessee Centennial Exposition in 1897, it being the sole relic of that event in Tennessee's history. It was necessary to either restore or demolish it. The latter course was unthinkable, and thus the restoration was mandatory and necessary.

This particular building, when it was erected, presented no disquieting problems, since it was thought to be temporary and presumably to be demolished when it had served its purpose. Almost any errors would be overlooked,—even if they were discovered,—and excused with the usual shrug of the shoulders and an allusion to "exposition architecture." Not so with this restoration, for here was a demand for permanent rejuvenation, with the use of marble or stone eliminated at the outset, due to prohibitive cost. There remained only reinforced concrete, finished as might be later determined. This alternative was attended by the usual visions of crazed and cracked surfaces, with here and there an irregular space of the base surface painfully visible, due to deterioration of the finish, the latter scattered in confusion on the pavement or the ground, mute witness of another failure chalked up against the unhappy architect,—or else perhaps the contractor!

The authority which constituted the most valuable source of reference was Penrose's "Principles of Athenian Architecture," which proved a seemingly inexhaustible mine of necessary information. This was ably supplemented by Collignon's *"Le Parthenon,"* with its reproductions of superb photographs by Boissonnas. These two volumes constituted a never-failing source of information in the research required in working out the mass of details connected with the work, and they yielded returns of incalculable value. It is scarcely necessary to say



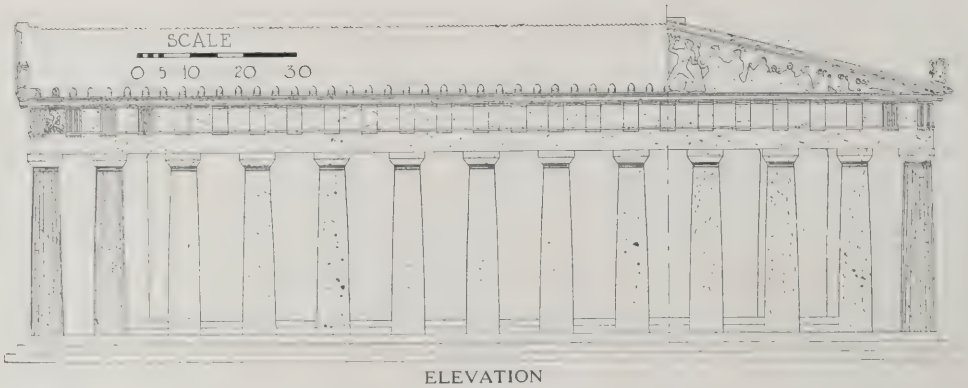
Photos, Tebbs & Knell, Inc.

The "Parthenon," Nashville

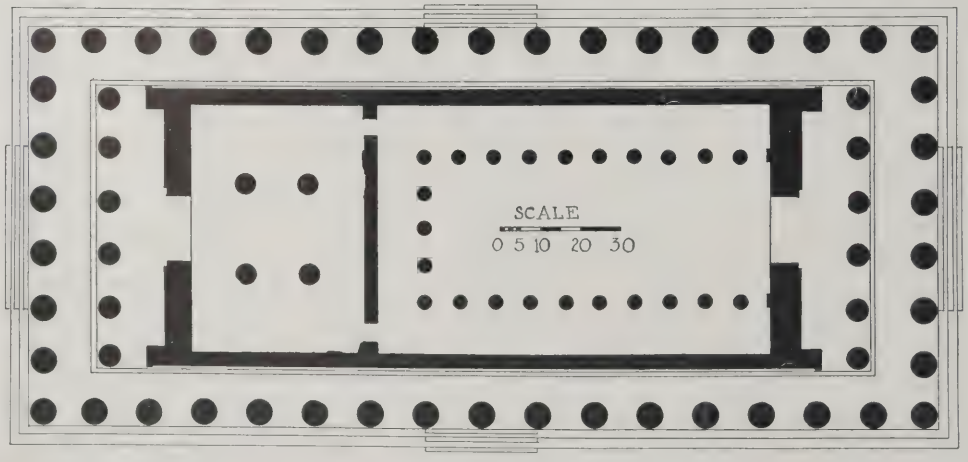
Facade and Pediment



GENERAL VIEW



ELEVATION



PLAN

THE "PARTHENON," NASHVILLE

RUSSELL E. HART, ARCHITECT



FACADE, FRIEZE AND PEDIMENT
THE "PARTHENON," NASHVILLE
RUSSELL E. HART, ARCHITECT

that, previous to the preparation of the drawings, an exhaustive survey had been made of the old building as regards measurements and dimensions of existing framework, to ascertain to what extent it could be retained to effect a saving in forms for the new work. The finishing stucco was composed of equal parts white and gray cement, with coarse aggregate crushed to about ⅜-inch ring size. In order to preserve uniformity in the general tone of the final color, the fine aggregate was ground from the same material as the coarse. This does not mean that an unvarying tone was sought on the surfaces, for it was more to avoid the cold and repellent tone which cement and ordinary fine aggregate will give, where visible between the coarse particles. As a matter of fact, there is a pleasing variety of color in the coarse material, ranging from light to very deep ivory, with some varying tones of brown and a very little brick red. The presence of a small percentage of quartz removes any suggestion of lifelessness.

The metopes, mutules, fret bands and other mouldings were pre-cast and set in place with adequate anchors left in the structural slabs. The models for the sculpture in the metopes were executed by George Julian Zolnay of Washington, while those for the eastern and western pediments are the work of Belle Kinney (Mrs. Leopold F. Scholz) and Leopold F. Scholz of New York. The sculptors have put into their work a vast amount of sympathetic study and research which are reflected in a high degree in these two pictured representations of the mythology of a far distant age and a great nation. Colors,—red and blue,—have been sparingly introduced. A rich brick red forms the background of the metopes, pediments, and the soffit of the cornice between the mutules. The same red appears also in the fret bands and hawksbeak mouldings, alternating with the field color in the former; and the same in the latter, with the addition of blue, defines the honeysuckle pattern in the cymatium crowning the pediment. The mutules are blue on all exposed sides and the soffit, with the guttæ in the field color. The results in polychrome obtained here and in other of these operations have removed all doubt as to the permanent effects possible of attainment, and the only limitation is that of restraint in their use without and within.

Perhaps the matter of sentiment might cause a pang of regret with some, that such a project of restoration should ever have been attempted at all. If so, it is their undisputed privilege. But it may also at least be said that these objectors may well wisely reserve judgment until such time in the future as it will carry conviction in weight and wisdom.



The "Parthenon" from the Lake, Nashville
Russell E. Hart, Architect

The Forum Studies of European Precedents

Text and Illustrations from Photographs by DWIGHT JAMES BAUM



CORNER OF COURTYARD, CA D'ORO, VENICE

BOSTON PUBLIC LIBRARY

IN the rapid age of which we are a part, an architectural pilgrimage between calls from clients is necessarily of short duration. Impressions retained in the mind are refreshed by records of two kinds,—sketches and photographs. The latter, while not improving one's draftsmanship, do however possess many advantages. To one who loves photography it becomes a study in composition, shades and shadows, and even in color values. So, during a recent trip of two months in Europe, I put into the form of photographic negatives my own collection of architectural motifs from favorite buildings. Eight of these are here added to the admirable series by Paul J. Weber and the late editor of THE FORUM, Albert J. MacDonald. Among the English views illustrating some of the fine old estates, there is included the yard of the interesting "Inns of Court," London, which I had the privilege of visiting. I have tried in some of the photographs to show the beauty of old, lichen-covered stonework and bits of architectural garden accessories that are part of the charm of old England. The one Italian view included shows the beautiful courtyard of the Ca d'Oro in Venice. I have tried to express the sunshine of Italy and the massive yet graceful character of the architecture.



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OLD GEORGIAN BUILDINGS IN THE YARD

The Inns of Court, London

The Forum Studies of European Precedents; Plate 74



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AN ENGLISH GARDEN ENTRANCE

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The Forum Studies of European Precedents; Plate 73



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MONTACUTE HOUSE, HOME OF LORD CURZON

Begun 1281; Completed 1302

The Forum Studies of European Precedents; Plate 76



© The Architectural Forum

PORTION OF GARDEN FACADE, BRYMPTON D'EVERCY

Built About 1250

The Forum Studies of European Precedents; Plate 77



© *The Architectural Forum*

CLOCK TOWER AND BELFRY IN FORECOURT, BRYMPTON D'EVERCY

Built About 1250

The Forum Studies of European Precedents; Plate 78



© The Architectural Forum

CLASSIC BRIDGE, WILTON HOUSE, SEAT OF THE EARL OF PEMBROKE

Sir William Chambers, Architect

The Forum Studies of European Precedents; Plate 79



© The Architectural Forum

EXEDRA, WILTON HOUSE, SEAT OF THE EARL OF PEMBROKE

Sir William Chambers, Architect

The Forum Studies of European Precedents; Plate 80

The Breakers, Palm Beach

SCHULTZE & WEAVER, Architects

THE illustrations and plans of The Breakers at Palm Beach tell such a plain story that lengthy description is unnecessary. With such instructive material before the reader, it is more to the point to confine comment to details regarding which the illustrations are mute, and to call attention to less obvious aspects of the building.

Fireproof throughout, the frame of the building is of reinforced concrete, consisting of floor slabs reinforced in two directions, supported by concrete beams and columns which carry down to spread concrete footings. Structural steel was used in the two tower sections and for the major rooms of the main floor to allow for large spans. The exterior walls are made of 8-inch interlocking tile, supported on the exterior beams at each floor level. These tile walls are covered with stucco, ornamental cast stone and run cement mouldings, and the stucco is coated with waterproof paint. Inside, the tile walls are waterproofed with liquid mastic coatings, upon which the interior plastering is applied upon metal lath. The roofs are of imported tile laid over membrane waterproofing. Interior partitions in the basement and main floor are built of terra cotta tile; on the bedroom floors the partitions are of gypsum block, except for the stairways and elevator shafts.



The Breakers, Palm Beach



Patio Detail

The main floor is notable for its fine use of plaster. The highly decorative ceilings of the more important rooms are of pre-cast plaster; portions of the walls, columns and pilasters are finished as limestone and Caen stone, some of which was run in place, while other portions were pre-cast. Pre-cast travertine was used throughout for the walls of the main lobby and for the walls of the adjoining elevator lobbies. For the paving of the different parts of the main floor a great variety of materials was employed. The main lobby and the elevator lobbies have a floor of pink Tennessee marble with a Botticino marble base; the central portion of the main dining room floor is parqueted in oak laid herringbone-wise, surrounded by a terrazzo border with a green marble base; the two side aisles of the dining room have a terrazzo paving with colored patterns, and the grand loggia and the promenade are likewise paved with terrazzo; the north and south lounges have floors of hexagonal red tile, and the adjoining foyers, verandas and terraces are paved with pre-cast stone flagging. The exterior stucco of The Breakers is finished with a fairly rough texture affording an agreeable contrast with the cast stone and the run cement mouldings. All the stucco surfaces are painted a light buff, while the cast stonework trimmings are in a somewhat



South Porch, The Breakers, Palm Beach

darker shade. Iron balconies yield a pleasant incidental interest, and these, as well as the window casings and sash, are painted a rather light green.

The old Breakers Hotel was destroyed by fire in March, 1925. Plans were at once begun for rebuilding, the contract for construction was let December 4, 1925, and the new building was completed and opened for guests on December 29, 1926. The achievement of such a feat in the face of many obstacles is a thing of which both the architects and the construction contractors may well feel proud. The trying conditions relative to labor and the transportation of building materials, prevalent in Florida when the work was begun, were a great handicap. All of these difficulties were surmounted.

The inspiration for the building, and especially for many of the chief rooms of the main floor, was frankly derived from different well known examples of Italian palace architecture. The result, however, is by no means a slavish copy of sundry Italian prototypes pieced together in a sort of architectural patchwork. On the contrary, one is impressed with the consistency and unity of the whole composition and the admirable way in which the body of precedent has been intelligently adapted to the needs of the problem. Altogether, it shows a wise and sane use of precedents as a source from which to



Looking from Main Entrance



Patio Detail, The Breakers, Palm Beach

draw and adapt rather than as a pattern to be copied.

One cannot fail to be impressed favorably by The Breakers' bigness, and the spacious breadth and dignity of scale everywhere evident. In following their Italian inspiration, the architects have grasped and held what those who draw from the same source so often fail to grasp,—that breadth of scale which is half the secret of the nobility of Renaissance Italian architecture. They have stinted neither their vertical nor horizontal dimensions, nor begrudged due height in proportion to their lateral measurements. That is why these interiors have a compelling charm so frequently lacking where height has been sacrificed in the hope of atoning for the deficiency by dint of adroit decoration. The owners of the hotel have not been niggardly in their views of space; they have not tried to exact the utmost service from every cubic foot of area within their walls. Under ordinary conditions a building of this size would have been forced to accommodate more than twice the number of guests. If ordinary views in this respect had been adhered to, the architects could not have given their work such amplitude and dignity of scale. This truth, which is of general application, might profitably be kept in mind by all concerned with large building undertakings. This is without doubt one of the most magnificent and successful examples of a palatial winter resort hotel.



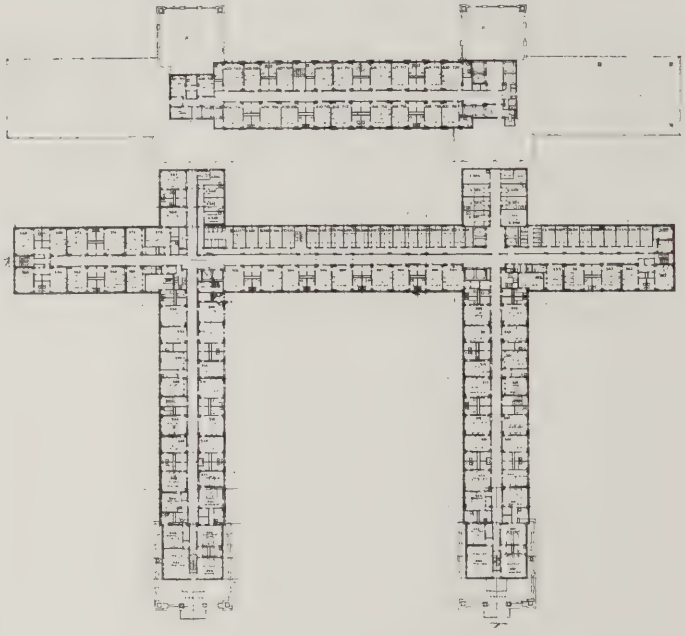
Detail of Minor Facade, The Breakers, Palm Beach



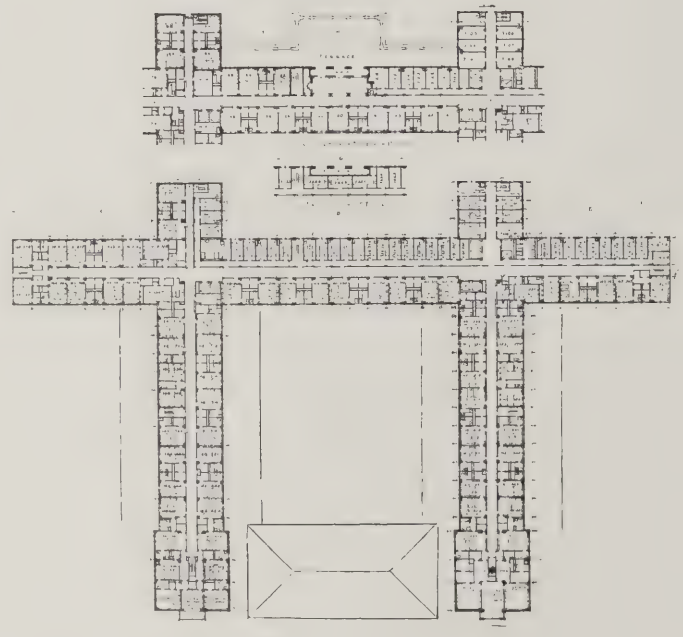
Photos. Tebbs & Knell, Inc.

Plans on Back

THE BREAKERS, PALM BEACH
SCHULTZE & WEAVER, ARCHITECTS



FIFTH AND TOWER FLOORS



TYPICAL FLOOR

PLANS, THE BREAKERS, PALM BEACH

SCHULTZE & WEAVER, ARCHITECTS



Detail on Back

PART OF FACADE
THE BREAKERS, PALM BEACH
SCHULTZE & WEAVER, ARCHITECTS



MAY 1927

DETAIL, THE BREAKERS, PALM BEACH
SCHULTZE & WEAVER, ARCHITECTS

No. 28

The Architectural Forum Details



LOGGIA
THE BREAKERS, PALM BEACH
SCHULTZE & WEAVER, ARCHITECTS



MAIN LOBBY
THE BREAKERS, PALM BEACH
SCHULTZE & WEAVER, ARCHITECTS

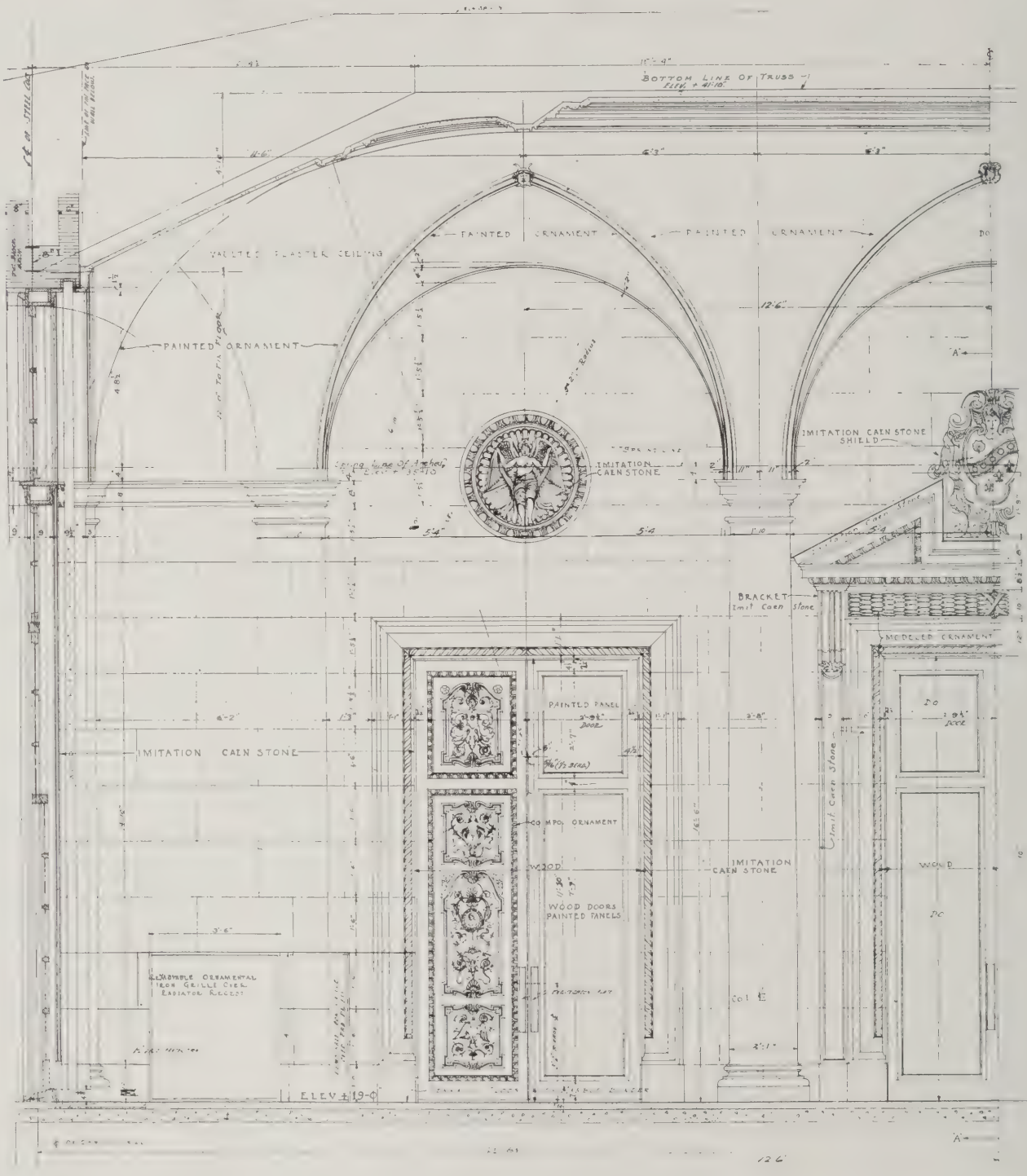


PROMENADE
THE BREAKERS, PALM BEACH
SCHULTZE & WEAVER, ARCHITECTS



Detail on Back

NORTH END, GRAND LOGGIA
THE BREAKERS, PALM BEACH
SCHULTZE & WEAVER, ARCHITECTS



DETAIL, THE BREAKERS, PALM BEACH

SCHULTZE & WEAVER, ARCHITECTS

MAY 1927

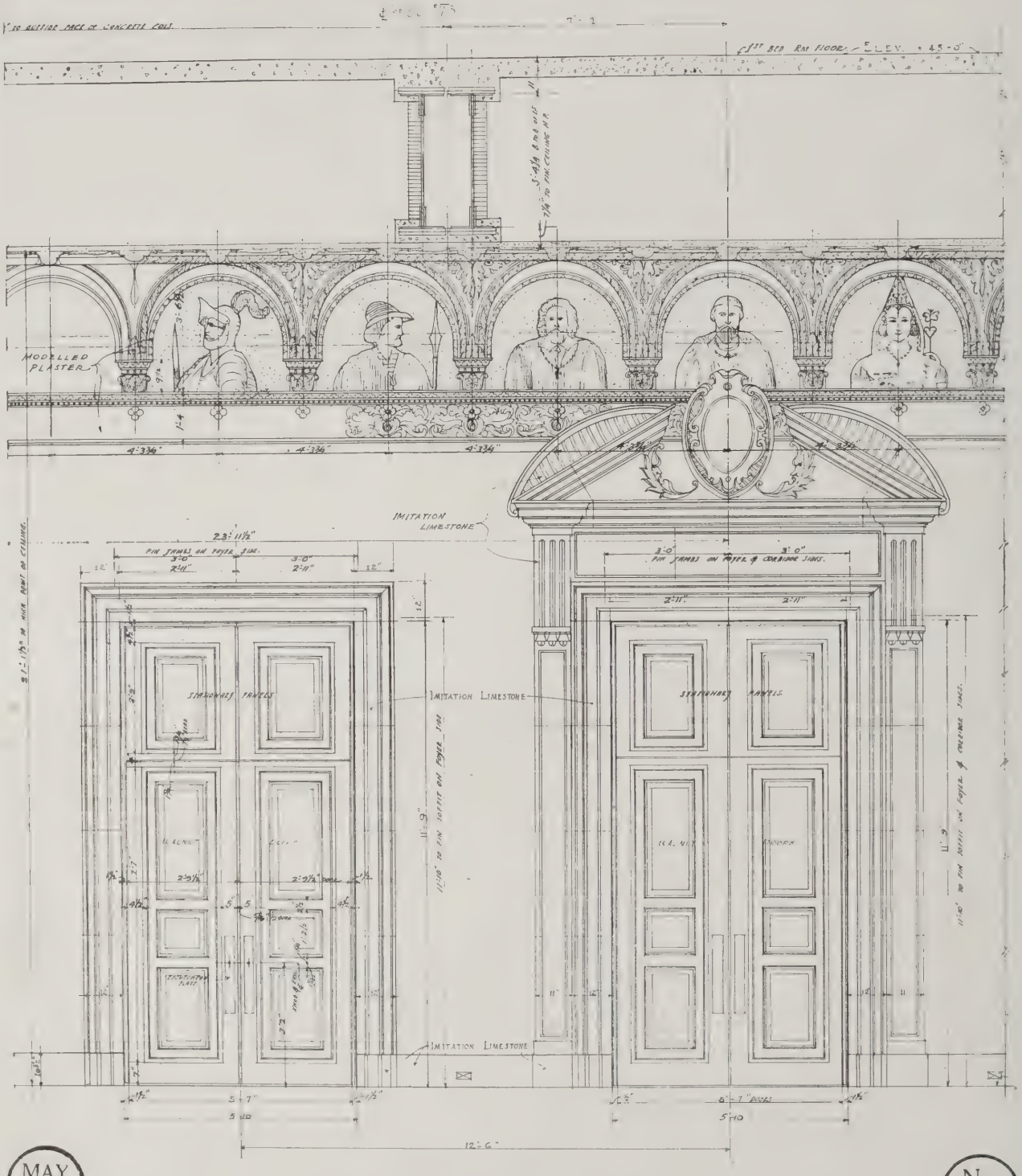
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Detail on Back

DOORWAY, SOUTH LOUNGE
THE BREAKERS, PALM BEACH
SCHULTZE & WEAVER, ARCHITECTS



MAY 1927

DETAIL, LOUNGE DOOR AND FRIEZE, THE BREAKERS, PALM BEACH

SCHULTZE & WEAVER, ARCHITECTS

No. 30



NORTH LOUNGE



SOUTH LOUNGE

THE BREAKERS, PALM BEACH

SCHULTZE & WEAVER, ARCHITECTS

Formal Entrance Courts

By RUTH DEAN

TWENTY years ago the family carriage could sweep up to the front door and execute a comfortable turn in an area that even a Ford today cannot negotiate by careful backing and filling, and as the spacious house of that day has shrunk before the expense of maintenance to smaller and smaller dimensions, the automobile has increased the size of its approach out of all proportion. Who would have believed, even ten years ago, that the chief problem of the country club, next to planning the golf course itself, would be to provide adequate parking space? Perhaps the elders of the country churches in an earlier day felt the same perplexity as the modern house committee when they provided those picturesque open sheds to shelter the farmers' wagons; and if they did, their solution of the problem was far more successful than that of the average country club today; a dark mass of automobile bodies is the least interesting foreground in the world for a fine piece of architecture, and frequently it injures it.

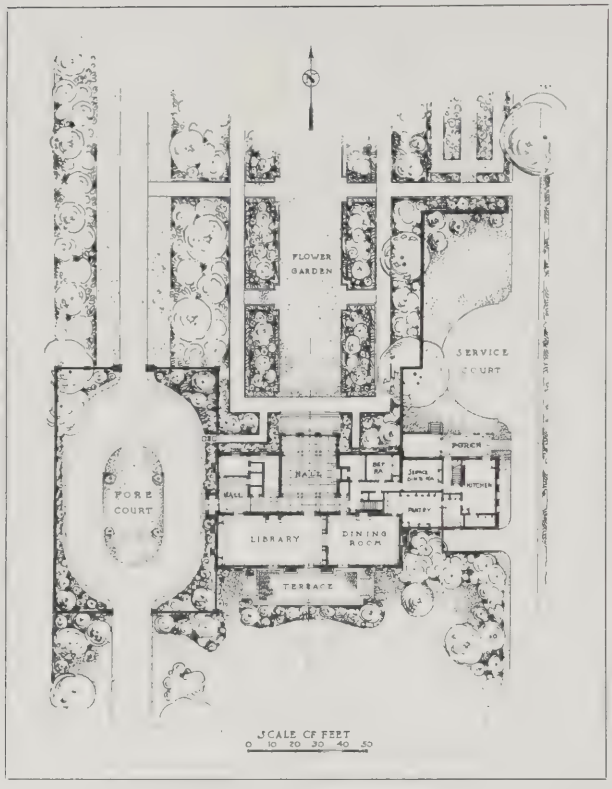
But space for the motor cars, both parking and turning area, must be provided, even though our green lawns be eaten up by gravel. The horse and carriage have taken with them the small turn-around, and the automobile has gradually increased its none too modest initial demands. Fondly as one may imagine, at the outset of planning a place, that green lawns are preferable to comfortable drives, the daily irritation of getting a car in and out of a cramped approach, not to mention unexpected damages to the automobile itself, makes the beauties of nature shrink in importance beside the damage to one's spiritual and material welfare. It is best to face the problem of the entrance drive in a spirit of generous compromise, to admit a few unpleasant facts in the beginning and avoid facing still less pleasant facts later on. One of these troublesome facts is that the turning radius of an average car is 17 feet. This means that the inside line of the road on a curve should have a radius of not less than 17 feet, and from this fact it develops that a car can back and turn in a court 40 feet square (it can actually do it in somewhat less than this, but not decently), that it can barely turn without backing in a circle of 60 feet outside diameter, and that to approach an entrance in any sort of style it must have a circle 70 or 75 feet in outside diameter. It should never be of less.

Next to the requisite space in which to turn, a right-hand approach that permits the car to be brought squarely alongside the doorstep is the chief factor in point of convenience. Planning a turn so arranged with reference to the front door that the car comes at the house angle-wise, with its nose poked at the doorstep, leaving the embarrassed occupant to skirt the car door and find himself just annoyingly out of reach of the doorstep, while the driver has to back away in order to resume his course around the turn, is an error that might frequently have been avoided by allowing a little more room beyond the central axis of the door. These are generalities



House of G. Herman Kinnicut, Esq., Far Hills, N. J.

Cross & Cross, Architects; Marian C. Coffin, Landscape Architect



Plot Plan, Estate of Mrs. Henry Stephens, Grosse Pointe, Mich.

which apply to whatever form of approach one may plan to have, from the simplest type, so seemingly inevitable on the small suburban place,—the horse-shoe drive,—to a grand avenue ending in a spacious forecourt. But the purpose of this article is, ignoring all other forms of the drive, to treat only the courtyard, to speak of its possibilities as a way out of perplexing drive and parking difficulties, and to speak also of the architectural treatment possible.

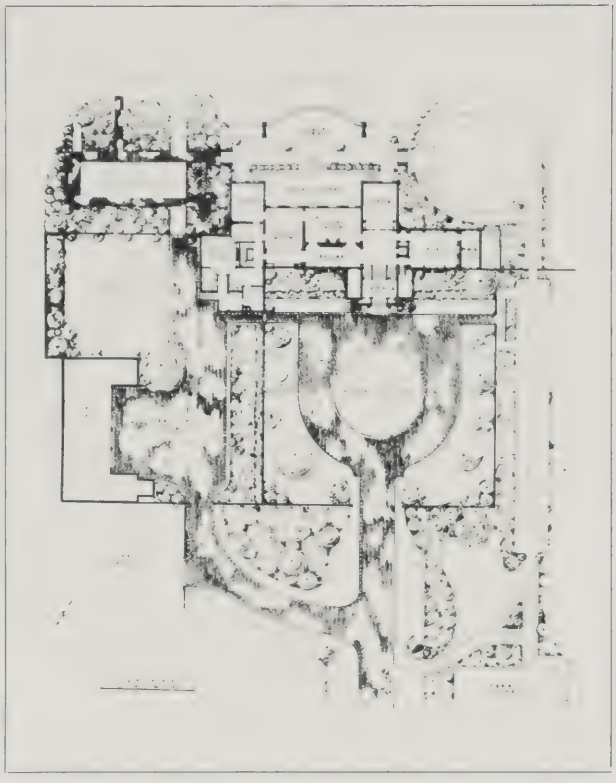
If it is only the very rich and the very poor who can afford to do as they please, it would seem to be only the very large property or the place of no size at all that can successfully adopt the courtyard. The last half of this statement may be stretched to include the house which has very little land available on its entrance side, for I have seen several places set near the road with frankly nothing between them and the highway but paved courts, that stretch away magnificently on the opposite, or living sides, of the houses. But this was because their owners chose to conserve what land they had for private uses, dispensing with any attempt at a park-like approach. Who has not been charmed by the small courtyard abroad, which is the commonest form of entrance,—a cobble-paved rectangle with house and farm buildings surrounding it? And yet how rarely one sees it here! Is this because of our grassy tradition, our feeling that we must have a front lawn whether or



Forecourt Entrance, House of Mrs. Henry Stephens, Grosse Pointe, Mich.
Charles A. Platt, Architect; William Pitkin, Jr., and Seward H. Mott, Landscape Architects

not we have one at the back?—or is it because real estate restrictions, by establishing building lines, prevent our doing something different from our neighbors?—or is it the high cost of masonry? Walls and paving, of which people are so prodigal in countries where labor is cheap, are almost indispensable accompaniments of the successful courtyard, and, alas, walls and paving are luxuries in a land where a mason's wage is $16 per day! Still, I have seen at least one successful yard with only a privet hedge to give it a sense of enclosure, and only gravel beneath the automobile tires. The essence of the courtyard is enclosure, and whether this is brought about by hedges or masonry, it must have walls that conceal the life of the rest of the place. The air of expectancy that any attractive anteroom engenders is due to the secret of the charm of the courtyard; in that moment between the ringing of the bell and the opening of the door, one anticipates the charming garden beyond, the quiet lawn, or pleasant meadow, and enjoys the courtyard itself as one of the details.

The courtyard of the Charles H. Sabin house, at Southampton, Cross & Cross, architects, Marian C. Coffin, landscape architect, with walls and planting both to enclose it, is charming for its combination of good architecture and excellent landscape architecture. The house itself is pleasing, the walls, terrace and entrance gate are well designed, the court offers



Plot Plan, Estate of D. M. Ferry, Jr., Esq., Grosse Pointe, Mich.



Forecourt Entrance, House of D. M. Ferry, Jr., Esq., Grosse Pointe, Mich.

Trowbridge & Ackerman, Architects; William Pitkin, Jr., and Seward H. Mott, Landscape Architects

a comfortable turning space, and the planting is well handled. Incidentally, this arrangement might be used with equal success on a much smaller property.

If one decides to dispense with the park-like approach in favor of the paved courtyard, then the architecture must be of a very high order, for the house will have no softening carpet of green to minimize its defects. Using a courtyard is distinctly an architectural method of handling the approach, and as such it depends for its effect on the perfection of its architecture. Grass, trees and shrubbery are softening garments that may conceal shortcomings in the architectural body, but stripped of these the house and walls must have enough beauty in themselves to be able to stand unadorned. An entrance court with grass in the center, a kind of compromise between paved court and grassy turn, is that of the estate of G. Herman Kinnicut, at Far Hills, N. J., of which Cross & Cross were also the architects and Marian C. Coffin also the landscape architect. Here again the combination of good architecture and landscape architecture produces an unusually satisfying whole, the estate being of consistent design.

A contrast to this somewhat informal entrance court is found in the more formal but equally skillful treatment of the D. M. Ferry, Jr. house at Detroit. Here the landscape architects, William Pitkin, Jr., and Seward H. Mott, have centered the approach on the main entrance to the house with the forecourt at the end of a long avenue. The avenue is the almost inevitable form of approach to a forecourt the entrance of which is on axis with the door of the house. Entering the court at the side, the approach drive may wind about and turn at the last minute, but it does not do to come unexpectedly face to face with the front door. An entrance court on axis demands a noble avenue for its approach, and is suitable therefore only to the house of considerable size and dignity; and the longer the avenue the better it will be for the impressiveness of the approach. However, the avenue itself is appropriate only on fairly level ground; aside from the injury to the landscape when trees are placed marching two and two straight up a hill and down again, it is a shock to descend onto the roof of a house, as one sometimes seems to be doing, or, contrariwise, to mount an inclined plane to its foundations. Irregularities in level must be treated in an informal manner with flowing curves that fit themselves to the contours of the earth, or else the face of the earth itself must be changed, and flattened. Straight lines, such as those of hedges and avenues, are best reserved for comparatively level places. The court that is to serve as a foreground for a large, formal house, it goes without saying, should be more spacious than that of a smaller house, and should receive architectural treatment that is in character with the architecture. As a matter of fact, there is no time when harmony between the house and its accessories is not desirable. Whether the architecture adjoining the house consists of a picket fence or an elaborately designed 10-foot wall, it is successful only if it is in keeping with the architecture of the house and only if it carries out the feeling of the building itself; an enclosure supplements the house.

Mr. Platt's beautiful gate piers at the entrances to the forecourt of the residence of Mrs. Henry Stephens in Detroit well suggest the dignity and the distinction to be contributed by beauty of architectural detail. Here the architect and landscape archi-



Photo, John Wallace Gillies

Entrance Court, House of Charles H. Sabin, Esq., Southampton, N. Y.

Cross & Cross, Architects; Marian C. Coffin, Landscape Architect

tect were confronted by a difficult problem, and the courtyard might easily have been commonplace and uninteresting. In a community where the houses are near one another, the properties being long, ribbon-like strips, with no places for the roads to go except from fronts to rears of these strips, it is not easy to design roads that are anything but speedways. But in this case the roadway seems to come to an end in a beautifully proportioned and enclosed courtyard; the court definitely terminates the long road from highway to entrance, and although it actually affords a passage to the garage, there is no feeling of its being the mere runway it might have become had it received less skillful designing.

The courtyard before the house of Charles Stone, at Locust Valley, possesses a really Italian flavor, due in large measure to its charming planting. Armand R. Tibbetts, the landscape architect, has used old cedars to furnish the characteristic note of the cypress in Italian landscapes, and he has used them not in the obvious manner in which they are too often employed, i. e., one each side the doorway, but casually, as if they had sprung up in these positions and as though a sympathetic owner had foreborne to cut them down. The grace and lightness of the dogwoods and birches form a pleasant contrast to the solid foliage mass of the cedars. What a relief is planting such as this from the miscellaneous shrubbery and assorted evergreens that bank the foundations of a great many houses, regardless of their architecture! Of late years an epidemic passion for boxwood has seized us, and the alternative to mass planting is likely to be two or four or six solid box specimens that have been uprooted from their old Virginia homes and freighted to the prosperous north, where we struggle, out of respect for their considerable cost, to temper the winter winds to their southern habits! Would it not be well to spare our burlap-sheltered decorations to the old houses they have adorned for a hundred years, and with something of Mr. Tibbetts' imagination utilize the excellent material that comes to hand? What could be more suitable to a Long Island courtyard than the cedar, dogwood and birch growing in the fields outside? And that he has selected from the native material such plants as would further his design and evoke an Italian spell to complement the architecture of the house is evidence of his skill and discrimination and regard for the fitness of things.

There is no key to the correct solution of any problem so unfailingly successful as the key of suitability. It is the foundation of all good taste and the essence of beauty. We are charmed by the white New England farmhouse with its clump of lilacs and its barnyard surrounded by comfortable outhouses, and we are moved to admire the spacious avenue leading to the dignified forecourt of a fine modern country house. The basis for our pleasure in both cases is their suitability to their purposes, beautifully expressed. When the forecourt seems to be the direct and straightforward means of providing an approach to the house it will be a happy solution of the automobile turn-around, but this only if it provides adequate space in which to get around, and if it is proportionate in size to the house, and receives architectural and landscape treatment in character with its surroundings. In planning such an approach due regard must be given to its highly practical requirements, and yet the work must possess architectural dignity and beauty to be truly successful.



Entrance Court, House of Charles Stone, Esq., Locust Valley, N. Y.
Armand R. Tibbetts, Landscape Architect

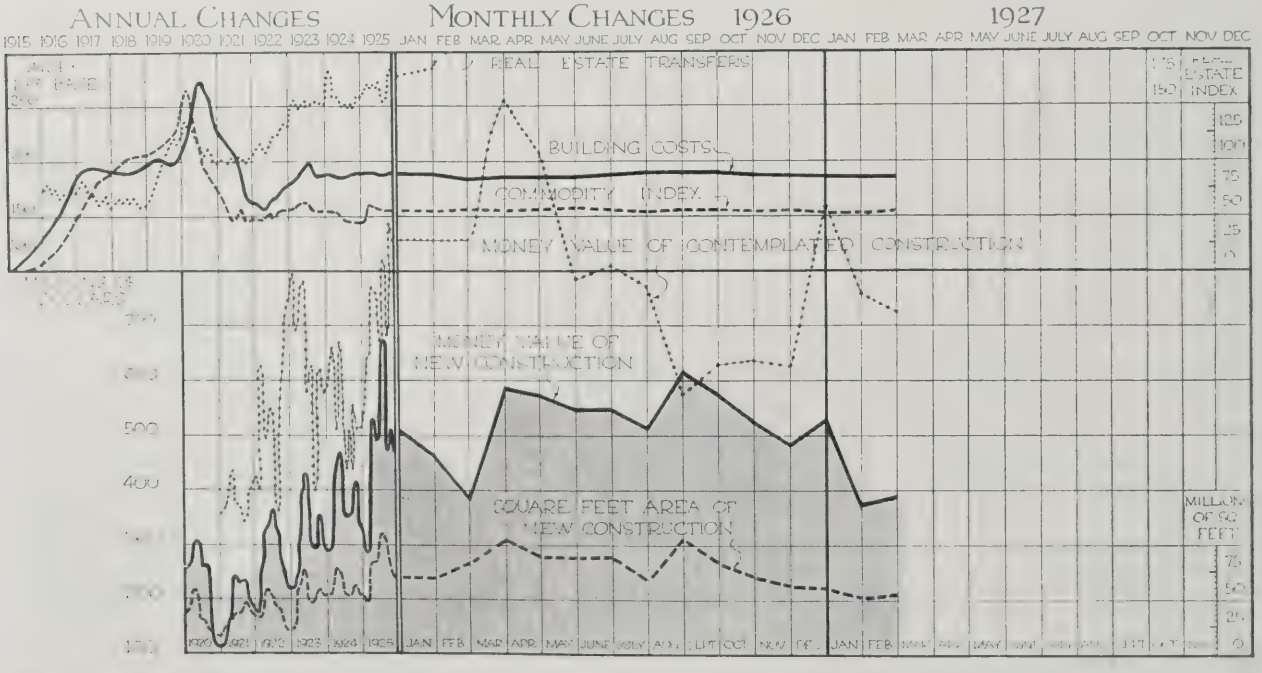
THE BUILDING SITUATION

A MONTHLY REVIEW OF COSTS AND CONDITIONS

AS there has been no comment on the building situation made in these columns since January, and as at that time predictions were made that there would probably occur a falling off of from 10 to 12 per cent in the volume of new building this year, it will be interesting to analyze the present trend of new construction activity. A study of the chart included here indicates that we have entered the year with the usual seasonal drop in activity. From figures reported by the F. W. Dodge Corporation, January of this year recorded the second largest total on record for that month, although it showed a 16 per cent drop from the figures of the maximum January, which was that of 1926. Much of this decrease was found in the contract volume of New York, but it must be remembered that in the January figures of last year there was a single $50,000,000 power plant job for New York, so that without considering that item, the graphic record would be deceiving. The month of February shows a slight upturn from the January figures, which is rather unusual but which is probably accounted for by the fact that already the high peak of plans filed in December, 1926, is beginning to show its reaction in actual committance.

In view of THE ARCHITECTURAL FORUM'S forecast, it is interesting to note that the total value of contracts let in the United States during the first two months of this year amounted to $779,324,900. This amount is approximately 10 per cent under the amount of work started in the first two months of 1926, and it represents the first confirmation of THE FORUM'S forecast of a 10 or 12 per cent decrease in activity throughout the country during this year.

In view of the unusually high valuation of projects filed in December, with considerable additional filing in January and February, it is presumed that the first quarter of this year will register a considerable volume of activity, and it is apparent that architects will be kept quite busy, although undoubtedly these few months will show some falling off of business in the average architectural office. All conditions point to the fact that we are now entering the first stage of a long-time decline in building activity, which is the best thing that could happen from an economic point of view, since it will gradually relieve the undue pressure of the last two years and reduce building activity to a new normal, probably without the unpleasant entailing of a collapse resulting from unwarranted conditions.



THESE various important factors of change in the building situation are recorded in the chart given here: (1) *Building Costs.* This includes the cost of labor and materials; the index point is a composite of all available reports in basic materials and labor costs under national averages. (2) *Commodity Index.* Index figure determined by the United States Department of Labor. (3) *Money Value of Contemplated Construction.* Value of building for which plans have been filed based on reports of the United States Chamber of Commerce, F. W. Dodge Corp., and *Engineering News-Record.* (4) *Money Value of New Construction.* Total valuation of all contracts actually let. The dollar scale is at the left of the chart in millions. (5) *Square Foot Area of New Construction.* The measured volume of new buildings. The square foot measure is at the right of the chart. The variation of distances between the value and volume lines represents a square foot cost which is determined, first by the trend of building costs, and second, by the quality of construction.

THE ARCHITECTS' FORUM

What Does the Architect Owe the Manufacturer?

By OREN THOMAS, *Architect*

SOMETIMES it's a mighty fine thing for us to give our own shoes a vacation and wear the other fellow's a little while. It would give us a much fairer understanding of many things.

I believe that architects and heating and ventilating engineers, as well as contractors, often do not give the manufacturer the consideration he deserves. I am speaking specifically of the manufacturer of heating and ventilating equipment because, owing to the specialized engineering involved and the highly technical nature of the product, mistakes of application are more frequent and more costly with his products than with some other materials more familiar to the architect. This lack of consideration works to our own detriment as well as to that of the manufacturer. We stigmatize any statements he may make with the self-interest connoting word "commercial" and take them with more than the proverbial grain of salt. Because the engineering staff of the manufacturer has been devoting itself to the perfection of the product and its application, we damn its engineering advice with the epithet "exploitation." If we would get down from our high horse occasionally and be really humanly honest with ourselves, we would see that the terms "commercial" and "exploitation" can be applied to ourselves quite as justly as to the high class manufacturer of ventilating and heating equipment. "The laborer is worthy of his hire" applies to the worthy manufacturer just as truly as it does to the architect or consulting engineer. We propagate our pet ideas just as strongly and just as "commercially," if you please, as does the manufacturer who is devoting his life to perfecting the mechanical excellence and the best use of his product for the benefit of the public.

The architect and the contractor, in fact, and the whole world, owe a debt to the engineering staffs of manufacturers. I care not what line of endeavor we study, the history of that progress cannot be written without the manufacturers' appearing large on every page. Who is chiefly responsible for advance in locomotive or automotive transportation, who is most responsible for practically solving the ventilation problem?—not the consulting engineer, but the engineer of the manufacturer. It is the "commercial" manufacturer, who in his endeavor to outstrip competition or extend his selling field is responsible for and has brought modern conveniences within the reach of all. In my estimation the ideals of service held by the manufacturer of character are as high as those of professional men. I believe that they take just as much pride in leadership and are just as earnestly desirous of building a reputation as we are. I say this with the full realization that many will take exception to my view that the standards of ethics of the successful manufacturer are as high as those of the successful architect. I do not believe, however, that any intelligent man can be in disagreement with my statement that the goal of commercial success is sufficiently important to induce the wise manufacturer to bend every possible effort to make and sell his product so that it will give the utmost satisfaction. The manufacturer in this new age of merchandising, whether his ideals are high or not, realizes that "the public builds the business it believes in." Therefore his effort, if he is ambitious to build a permanent and profitable business, is to "sell" satisfaction. In other words, he recognizes that inevitably the customer's good is his own good as well.

A man who understands the fundamentals of human nature said that "advertising intensifies action or reaction." This simply means that all the advertising in the world cannot make a really poor article sell. Such advertising through misrepresentation might sell a lot of goods at the start. Everyone who bought the article, however, would be dissatisfied, so the net result would be that there would be hundreds of thousands of tongues wagging against these advertised goods. That's how advertising reacts against a poor article. Therefore, the intelligent manufacturer realizes that to benefit from advertising he must have goods that back up his advertising representations. Then his advertising that sells the first customers will cause the tongues of pleased customers to wag in his favor. There are two undisputed fundamental facts,—first, that it does not pay to advertise poor goods, and, second, that advertising has a tendency to improve the quality of the goods. So you may depend upon it that the more a manufacturer advertises the more assurance you have that that manufacturer is going to try in every possible way to satisfy his customers in order to get the most out of his presumably large advertising investment.

Let me try to show you what all this has to do with giving the manufacturer a square deal. You as an architect insist that the contractor follow your specifications. If he does not, you have a just cause for grievance, since any deviation may result in dissatisfaction that reacts against you. Your training and years of experience have put you in a position

to know what to specify in order to give fullest concrete expression to your architectural skill. You certainly would have just cause for annoyance if the contractor, following some pet hobby of his own, should modify your plans and change your specifications. Yet I am afraid that at times architects use a manufacturer's equipment in ways that it was never intended to be used,—in ways that decrease its effectiveness. I have seen architects and consulting engineers decide upon a certain type of ventilation and so apply it that the results the makers designed it to give could never be possibly attained. With all due credit to the architectural profession, I believe that the manufacturer of ventilating and heating equipment knows more about the proper installation of his own product than we do. He certainly ought to, after years of development and experience with his specialty in installations throughout the land. It seems to me that the proper function of the architect when it comes to the matter of heating and ventilation equipment is to select the particular type desired and then follow the manufacturer's recommendations as closely as possible. Of course the manufacturer's advice is "interested" advice; he is interested in giving the advice that will give the best results from his system, or he could not continue in business.

Early in my own architectural career I came to the conclusion that certain methods of ventilation give the best results. I always endeavor to have the installations follow the manufacturer's recommendations, for thus only can I be assured that the system will give the results for which it is designed. Yet I know architects and consulting engineers who, no matter what type of ventilation they select, make modifications that render it less effective. Consider, for example, unit ventilation which takes the air directly from outdoors and transmits it into each room through a machine that is easily accessible for cleaning. I have seen unit ventilators drawing their air supply through long and tortuous ducts, and the machines themselves so concealed that it was next to impossible to either clean or oil them. Though the manufacturer designs his machine to occupy the center of an exposed wall, I have known architects to specify its installation in corners and inside walls, seemingly with the idea of doing everything possible to prevent its effective operation. I have seen it put upside-down, hanging on the wall or ceiling, and in fact in every position save that recommended by the manufacturer. Some manufacturers, who are more interested in making sales than they are in having their systems work at highest efficiency, will say "yes" to almost any modification suggested by the architect or consulting engineer. The leaders, however, insist that an installation be correctly made or nearly so. It has been my experience that the manufacturer who insists on the correct installation is the man whose product you can depend on. You can be sure that he is selling real results, based on fundamentally correct principles. Don't trust "yes" men, who will do anything to please; deal with the manufacturer who designs his equipment properly and insists that it be installed properly. The manufacturer protects the architect when he protects himself.



A House in Buffalo

Green & Wicks, Architects; William Pitkin, Jr. and Seward H. Mott, Landscape Architects

SMALL BUILDINGS



REAL ESTATE OFFICE AT RUSSELL GARDENS, GREAT NECK, N. Y.
MANN & MAC NEILLE, ARCHITECTS

FROM a casual glance at this attractive small building the passerby would hardly realize that it houses the office of a real estate company. Doubtless some sign near the roadside indicates the purpose of the little structure. The rough stucco walls and stained shingle roof have been designed so as to give originality and simplicity. The unbroken sweep of the roof and the frank treatment of the glass entrance doors are interesting features of this architectural composition. The balanced plan is cruciform in outline, with the center fireplace located where the altar would properly come in a church. Small corner offices balance the center chimney. The spacious, well arranged reception room occupies the greater part of the building. The tall bay window at one end and the omission of a ceiling add dignity and height. Considering its purpose, this plan is entirely logical and convenient.



Floor Plan

FORUM SPECIFICATION AND DATA SHEET—174

Real Estate Office, Russell Gardens, Great Neck, N. Y.; Mann & MacNeille, Architects

GENERAL CONSTRUCTION:
Frame.

EXTERIOR MATERIAL:
Stucco—rough finish.

ROOF:
Stained shingles; variegated colors.

WINDOWS:
French doors and double sliding sash.

FLOORS:
Slate floor in main office; elsewhere, oak.

HEATING:
Heater and open fireplace.

PLUMBING:
Lavatory only.

ELECTRICAL EQUIPMENT:
Lighting.

INTERIOR MILLWORK:
Pine.

INTERIOR WALL FINISH:
Rough plaster; wood ceiling in large room.

DECORATIVE TREATMENT:
Stained woodwork; painted plaster.

APPROXIMATE CUBIC FOOTAGE:
9,100.

COST PER CUBIC FOOT:
62c.

DATE OF COMPLETION:
October, 1925.

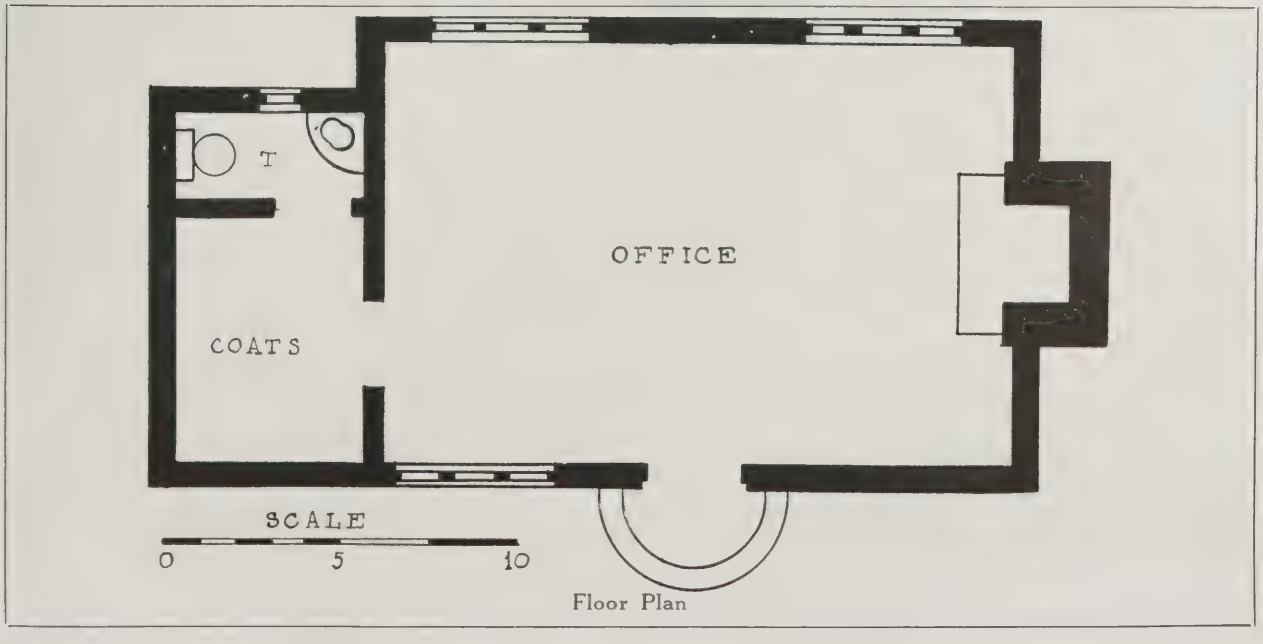


Real Estate Office at Russell Gardens, Great Neck, N. Y.
Mann & MacNeille, Architects



REAL ESTATE OFFICE AT GREAT NECK, N. Y.
FRANK J. FORSTER, ARCHITECT

SMALL as this building is, it possesses much of the charm and picturesque quality which characterize all of Mr. Forster's work. Above the rough textured stucco walls a low, sweeping roof having considerable overhang suggests in its outline the thatched roofs seen in England. It is certainly a pity that the commercial ambition of this dealer in real estate so outweighed an appreciation of good architecture that he did not realize the injury done to this quaint little house by the placing of huge signs on two slopes of the roof. In the illustration here, which was made from a photograph taken several years ago by the late John Wallace Gillies, the building appears as originally finished without the objectionable and obtrusive roof signs. This little real estate office looks so homelike that prospective purchasers of building lots might not realize from a distance that it is in fact an office and not a home,—so perhaps the large signs are a necessary disfigurement if the building is to serve its purpose.



Floor Plan

FORUM SPECIFICATION AND DATA SHEET—175

Real Estate Office at Great Neck, N. Y.; Frank J. Forster, Architect

OUTLINE SPECIFICATIONS

GENERAL CONSTRUCTION:
Stucco on frame.

EXTERIOR MATERIAL:
Stucco.

ROOF:
Shingles, laid irregularly.

WINDOWS:
Casements.

FLOORS:
Wide oak boards.

HEATING:
Coal stove and fireplace.

PLUMBING:
Lavatory only.

ELECTRICAL EQUIPMENT:
Lighting.

INTERIOR MILLWORK:
Natural pine.

INTERIOR WALL FINISH:
Two-coat plaster.

DECORATIVE TREATMENT:
Stained woodwork.

APPROXIMATE CUBIC FOOTAGE:
3,525.

COST PER CUBIC FOOT:
About 75c.

YEAR OF COMPLETION:
1920.

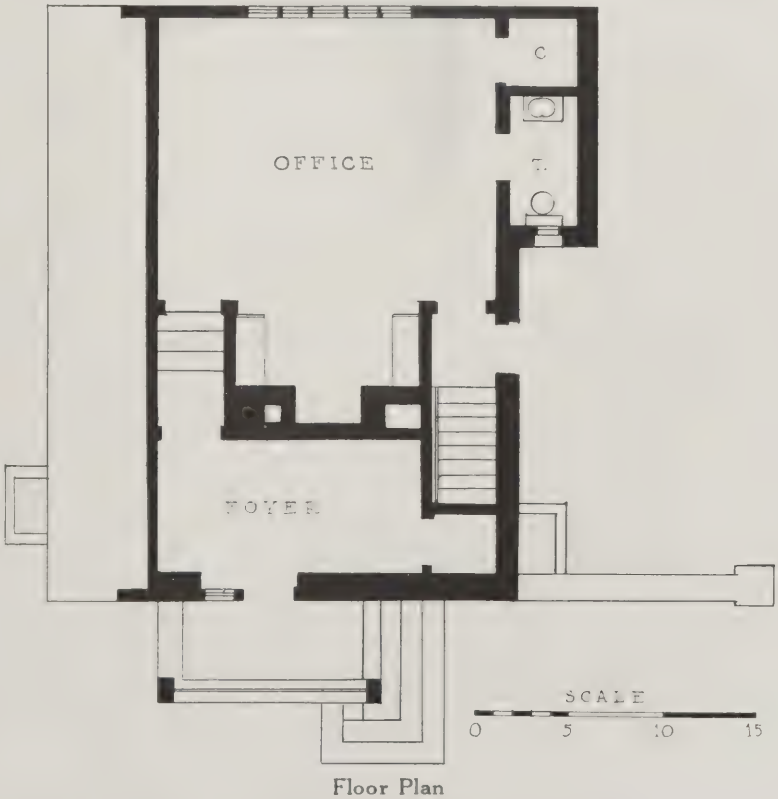


Real Estate Office at Great Neck, N. Y.
Frank J. Forster, Architect



REAL ESTATE OFFICE, KENILWORTH, GREAT NECK, N. Y.
PATTERSON & WILLCOX, ARCHITECTS

IT is fortunate for the public taste that all country realtors are not so anxious for business that they disfigure their suburban real estate buildings with large and disturbing signs. This little house at Kenilworth shows how good architecture may be picturesquely expressed in small commercial cottages. In this building the combination of rough brick walls with wide stained siding for the gable ends and rough slates of various tones for the roof is successful and full of suggestion. Apparently no



Floor Plan

FORUM SPECIFICATION AND DATA SHEET—176

Real Estate Office, Kenilworth, Great Neck, N. Y.; Patterson & Willcox, Architects

GENERAL CONSTRUCTION:
Frame.

EXTERIOR MATERIALS:
Stone, brick and adzed oak.

ROOF:
Slate.

WINDOWS:
Casements of metal; leaded glass.

FLOORS:
Oak.

HEATING:
Steam.

PLUMBING:
Usual fixtures in toilet room.

ELECTRICAL EQUIPMENT:
Lighting.

INTERIOR MILLWORK:
Oak.

INTERIOR WALL FINISH:
Antique plaster.

DECORATIVE TREATMENT:
Beamed ceilings; all finish antiqued.

APPROXIMATE CUBIC FOOTAGE:
8,000.

care or cost was spared in making this office-house original and attractive. The plan is convenient as well as effective. Entering one end of the building, a foyer with a coat closet provides a sort of anteroom or reception hall. Through an entry-way four steps lead down to the office, which is on a slightly lower level. This is a large room of approximately 16 by 18 feet, with a deep fireplace alcove or inglenook. From this office open a lavatory and a large closet for the storage of plans. As this building is intended to serve as an office, the plan is convenient, practical and comfortable. Credit and congratulation can be divided between architect and owner for securing so admirable a building.

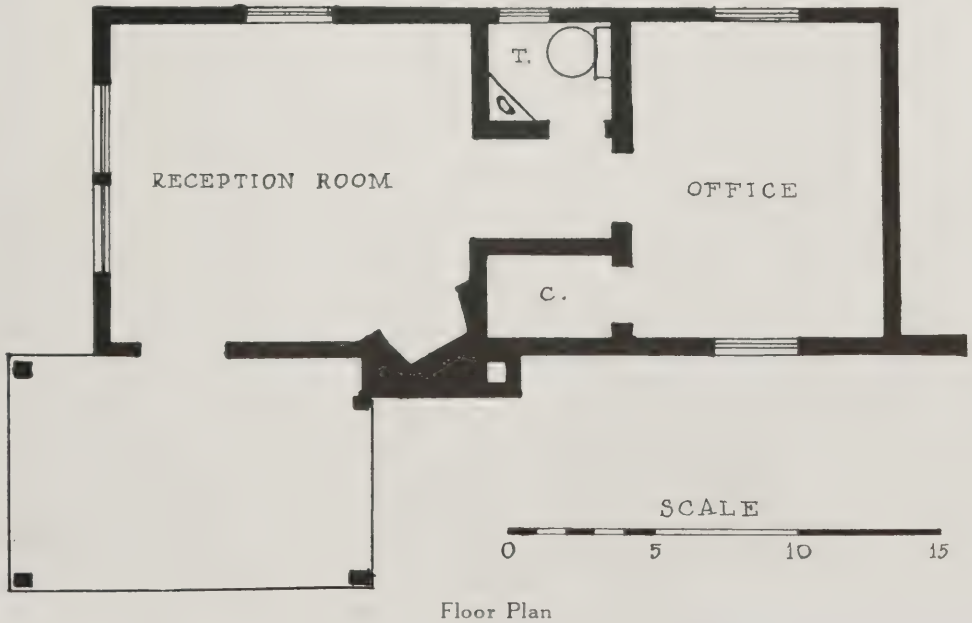


Real Estate Office at Kenilworth, Great Neck, N. Y.
Patterson & Willcox, Architects



BUILDING FOR CANTERBURY REALTY CORPORATION, GREAT NECK, N. Y.
JAMES MACPHERSON, ARCHITECT

ONE of the most definite indications of the growing appreciation and influence of good architecture is the excellence of suburban real estate offices. Nothing attracts a prospective purchaser of a building site or house and lot in a new real estate development more than a well designed and often picturesque small building used as the headquarters of the selling or renting agent of the realty company. Great pains and much money are often spent today on the design, construction and furnishing of these small commercial buildings. Although but few of them have more than one or two rooms, most of them suggest in miniature houses designed for domestic use and are the work of some of the best known small house architects. This particular realty house combines in an attractive and original manner rough stucco, half-timber work and wide siding in the gable ends. The low, sweeping roof is



Floor Plan

FORUM SPECIFICATION AND DATA SHEET—177

Building for Canterbury Realty Corporation, Great Neck, N. Y.; James Macpherson, Architect

GENERAL CONSTRUCTION:
Stucco on metal lath.

EXTERIOR MATERIAL:
Stucco.

ROOF:
Stained shingles.

WINDOWS:
Steel casements.

FLOORS:
Pine planking.

HEATING:
Fireplace and hot air furnace.

PLUMBING:
Usual fixtures in toilet room.

ELECTRICAL EQUIPMENT:
Hand wrought fixtures.

INTERIOR MILLWORK:
Rough cypress.

INTERIOR WALL FINISH:
Trowel-finished plaster.

DECORATIVE TREATMENT:
Lead and oil paint on rough plaster.

APPROXIMATE CUBIC FOOTAGE:
6,336.

COST PER CUBIC FOOT:
Approximately 50c.

DATE OF COMPLETION:
August, 1925.

broken on the front by a massive chimney and the projecting entrance porch with side seats. The exterior trim is stained brown, which creates a pleasant contrast with the yellow tones of the painted plaster. No doubt is left as to the purpose of the building, since each gable end of the house carries in large letters the name of the real estate company. In this case the house has two rooms, a reception room and office, between which an entry-way, closet and toilet are located. The extension of the line of the rear roof by means of a slat fence or screen is one of the unusual notes in this design. At the back of the house bulkhead steps lead down to the basement, where a small hot air furnace is located. Such a simple but unique little building as this offers many architectural suggestions to the prospective home builder, and it certainly adds considerably to the architectural dignity of the subdivision which it serves.

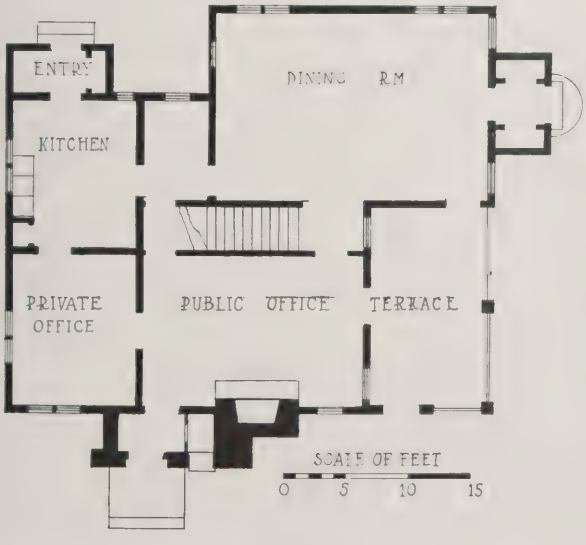


Building for Canterbury Realty Corporation, Great Neck, N. Y.
James Macpherson, Architect



OFFICE AND HOUSE OF THOMAS J. GOOD, PELHAM MANOR, N. Y.
ARTHUR PURDY, ARCHITECT

WERE it not for the swinging sign hung from a post in front of this house, it is hardly likely that anyone would know that this is a real estate office and not a home. As a matter of fact, it is a combination of both, as Mr. Good had the house so designed and planned that it could be used not only as his place of business but also as his home. The entrance to his real estate office faces and is easily accessible from the highroad. The entrance to the large living room, which serves for dining purposes as well, is at one side of the house and reached by a separate path. The plan has been cleverly worked out so that the business and domestic departments of it in no way conflict. It is well adapted to the use of a physician or anyone who desires to combine his business and living quarters.



First Floor



Second Floor

FORUM SPECIFICATION AND DATA SHEET—178

Office and House of Thomas J. Good, Pelham Manor, N. Y.; Arthur Purdy, Architect

GENERAL CONSTRUCTION:
Stucco on frame, brick and stone.

EXTERIOR MATERIAL:
Stucco on metal lath.

ROOF:
Shingles, thatch effect; variegated colors.

WINDOWS:
Wooden casements.

FLOORS:
Parquet. Oak "log cabin," alternate black and natural colors in offices; oak strip flooring in other rooms.

HEATING:
Hot water. Tubular boiler.

PLUMBING:
Brass piping. Standard fixtures.

ELECTRICAL EQUIPMENT:
Electric ventilator; plugs and outlets.

INTERIOR MILLWORK:
Paneled doors; stock trim and base.

INTERIOR WALL FINISH:
Special finish for office room's walls and ceilings; all other walls hard troweled finish.

DECORATIVE TREATMENT:
Office rooms finished old ivory; all other rooms paneled and finished in oil colors, stippled. Exterior stucco work finished in glazed orange. The exterior trim and woodwork finished in a deep green.

APPROXIMATE CUBIC FOOTAGE:
33,390.

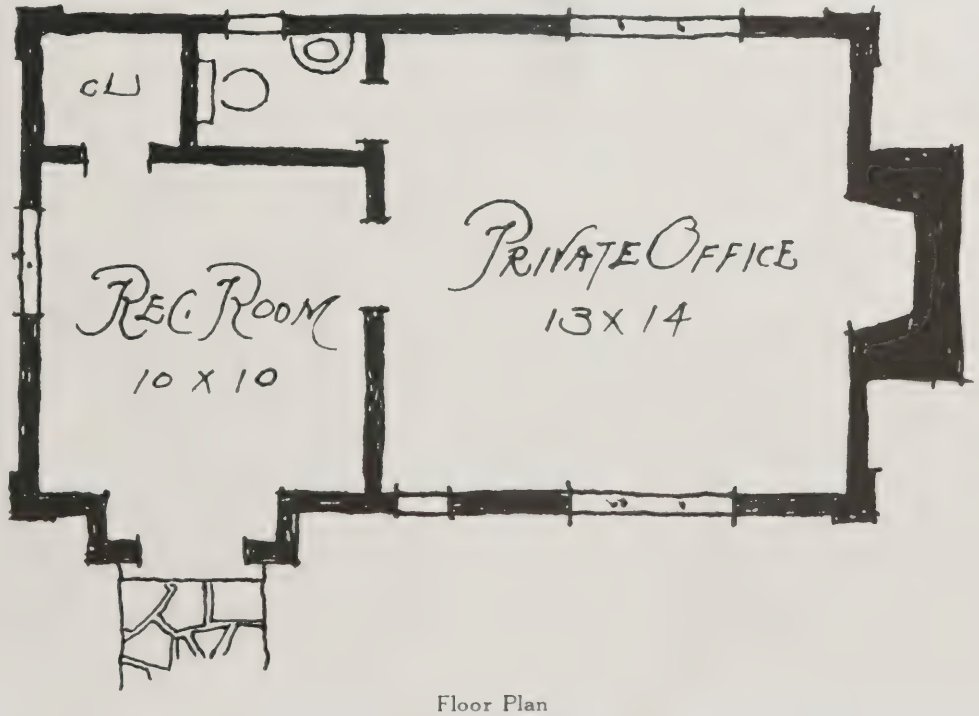


Office and House of Thomas J. Good, Pelham Manor, N. Y.
Arthur Purdy, Architect



REAL ESTATE OFFICE AT LARCHMONT, N. Y.
E. D. PARMELEE, ARCHITECT

HERE is a simple little building, rectangular in plan, which has been made individual and attractive not only by the materials used but by the design as well. The high, dormerless roof overhangs a low one-story wall, to which the windows give scale and character. A slightly projecting porch breaks the roof with a sharp gable in which rough stucco and brickwork are used in an amusing man-



Floor Plan

FORUM SPECIFICATION AND DATA SHEET—179

Real Estate Office, Larchmont, N. Y.; E. D. Parmelee, Architect

OUTLINE SPECIFICATIONS

GENERAL CONSTRUCTION:
Frame.

EXTERIOR MATERIALS:
Stucco; brick quoins at corners.

ROOF:
Asphalt shingles cut to various shapes. Colors variegated.

WINDOWS:
Casements.

FLOORS:
Imitation stone.

ELECTRICAL EQUIPMENT:
Lighting fixtures, hand-made.

INTERIOR WALL FINISH:
Imitation stone.

ner. To say that the signs with which the building is now disfigured ruin its architectural appeal and character is to put it mildly. The signs completely kill the scale and quality of the design. If it is necessary for business reasons to use signs so obtrusive and objectionable, it would seem that a building of less architectural merit would answer the purpose quite as well. In fact why not first select the necessary signs and then erect walls to carry them? No appreciative realtor would so disfigure a building.

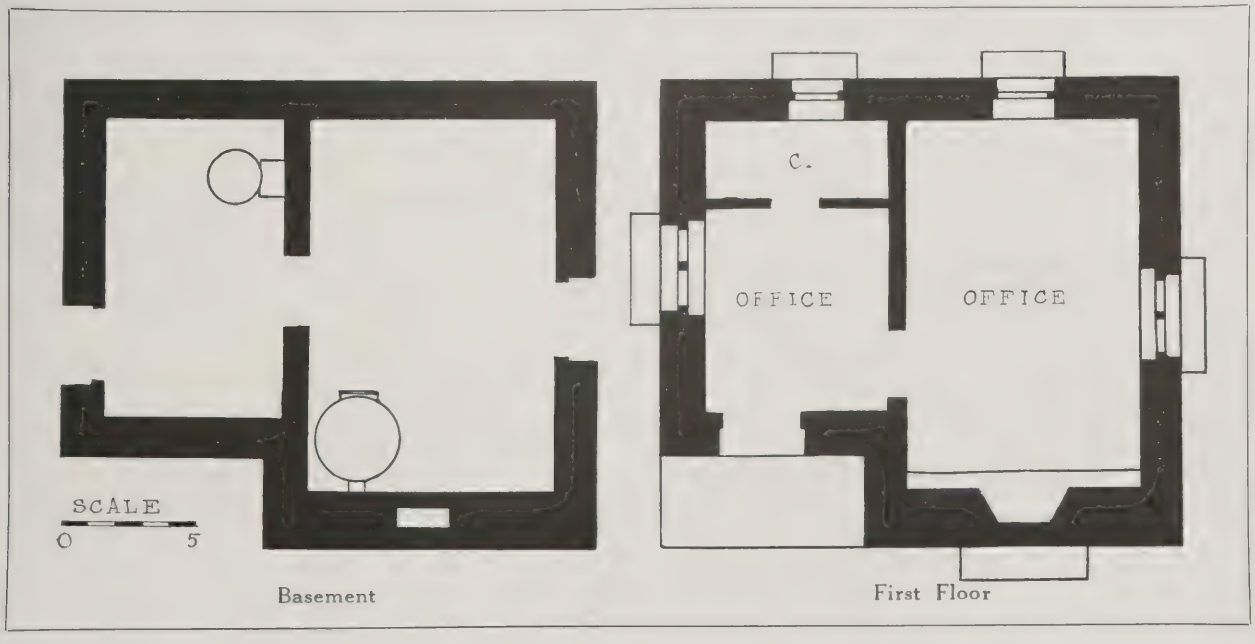


Real Estate Office at Larchmont, N. Y.
E. D. Parmelee, Architect



OFFICE OF THE HOMELAND COMPANY, HASTINGS, N. Y.
JOSEPH EMMETT KELLY AND WILLIAM CAIN, ARCHITECTS

IF he who seeks to own his own home in the country should happen upon this little stone house at the hour of the day and the season of the year when sunlight and shadow are casting upon it their fascinating spell, it would be difficult for him to resist buying a lot at "Shado-Lawn." From location and design this little building could serve quite as well for a gate lodge as for a real estate office. The small windows and low roof and the character of the design give a thoroughly domestic atmosphere. The spotted effect produced by the light-toned shingles seems unfortunate, but time and weather will dull them down and leave to the sun and the leaves the work of spattering the roof with high lights and shadows. The quality of the stonework is excellent and might well have been carried out in the low walls and piers that connect the cottage with the highroad. It is probable that the walls and piers were in existence before this little "gate lodge office" was erected, belonging probably to an old estate.



FORUM SPECIFICATION AND DATA SHEET—180

Office of the Homeland Company, Hastings, N. Y.; Joseph Emmett Kelly and William Cain, Architects

OUTLINE SPECIFICATIONS

GENERAL CONSTRUCTION:
Stone.

EXTERIOR MATERIALS:
Stone, with wood trim.

ROOF:
Stained shingles.

WINDOWS:
Wood casements.

FLOORS:
Oak.

HEATING:
Steam and fireplace.

PLUMBING:
One toilet room.

ELECTRICAL EQUIPMENT:
Lighting.

INTERIOR WALL FINISH:
Planked doors; plaster walls and ceiling.

DECORATIVE TREATMENT:
Antiqued woodwork.



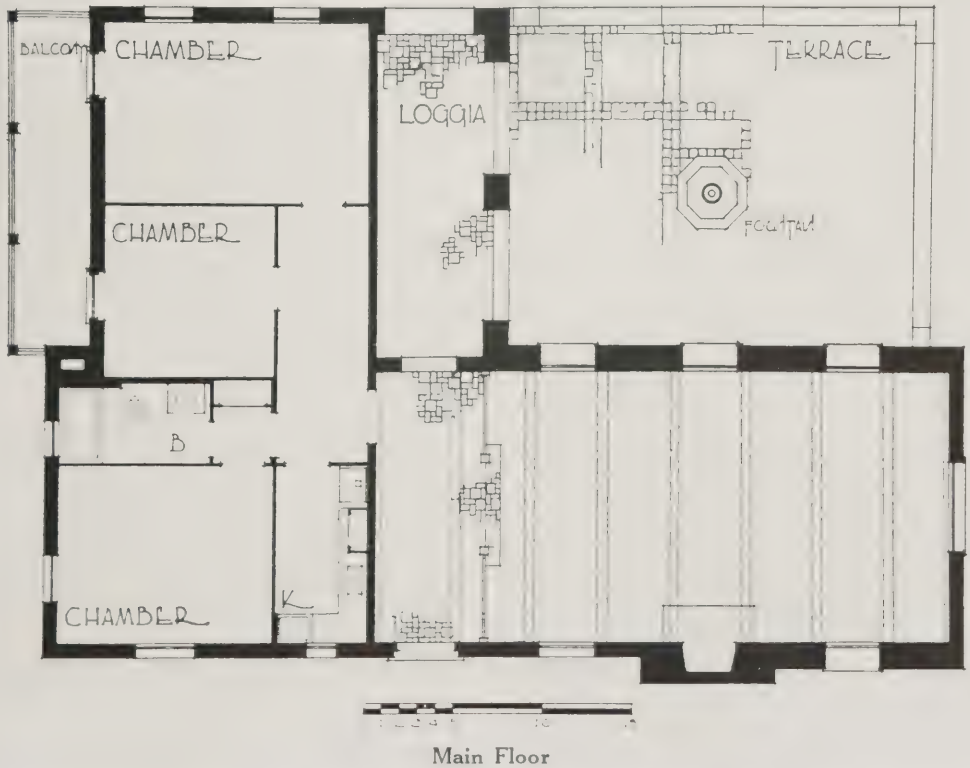
Office of the Homeland Company, Hastings, N. Y.
Joseph Emmett Kelly and William Cain, Architects





OFFICE AT FOX MEADOWS, HARTSDALE, N. Y.
ANDREW J. THOMAS, ARCHITECT

OF all the recently erected suburban real estate office buildings, perhaps the most artistic and attractive is that at Fox Meadows. The location could not be more beautiful. In the basement, opening on the lower level, is a garage which would seem to be an important feature in a suburban real estate building. An interesting wood balcony supported on heavy brackets adds interest to the rear elevation. The main roof of the house is brought down over this balcony and supported on turned posts, giving an Italian character to this side of the house. Italian chairs, tables and cabinets add much



Main Floor

FORUM SPECIFICATION AND DATA SHEET—181

Office at Fox Meadows, Hartsdale, N. Y.; Andrew J. Thomas, Architect

OUTLINE SPECIFICATIONS

GENERAL TYPE OF CONSTRUCTION:
Hollow tile.

EXTERIOR MATERIAL:
Stucco.

ROOF:
Roofing tile.

WINDOWS:
Sash.

FLOORS:
Wood; pebbled terrace.

HEATING:
Open fireplace and steam.

ELECTRICAL EQUIPMENT:
Specially designed lighting fixtures.

INTERIOR MILLWORK:
Hand-adzed oak.

INTERIOR WALL FINISH:
Plaster.

DECORATIVE TREATMENT:
Distemper coloring.

to the decorative effect of the interior. From the living room long casement doors open upon a little paved courtyard with a fountain as the central feature. The arched loggia of the wing of the building, on the other side of which is the overhanging Italian balcony already spoken of, also opens onto this garden court. The beauty of stucco-covered walls is nowhere more effective than in a situation such as this, where great trees cast long, lingering shadows over the sunlit surface. There is only one criticism, if indeed it is at all a criticism, that can be made. The character and charm of this design are distinctly domestic. There is no suggestion of any kind that the building is the headquarters of a local realtor. Not a single unsightly sign blatantly bawls out the unfortunate fact that a fine bit of architecture is devoted to the desecrating uses of commercialism. Necessary signs are probably elsewhere.





Office at Fox Meadows, Hartsdale, N. Y.
Andrew J. Thomas, Architect

EARLY AMERICAN DETAILS

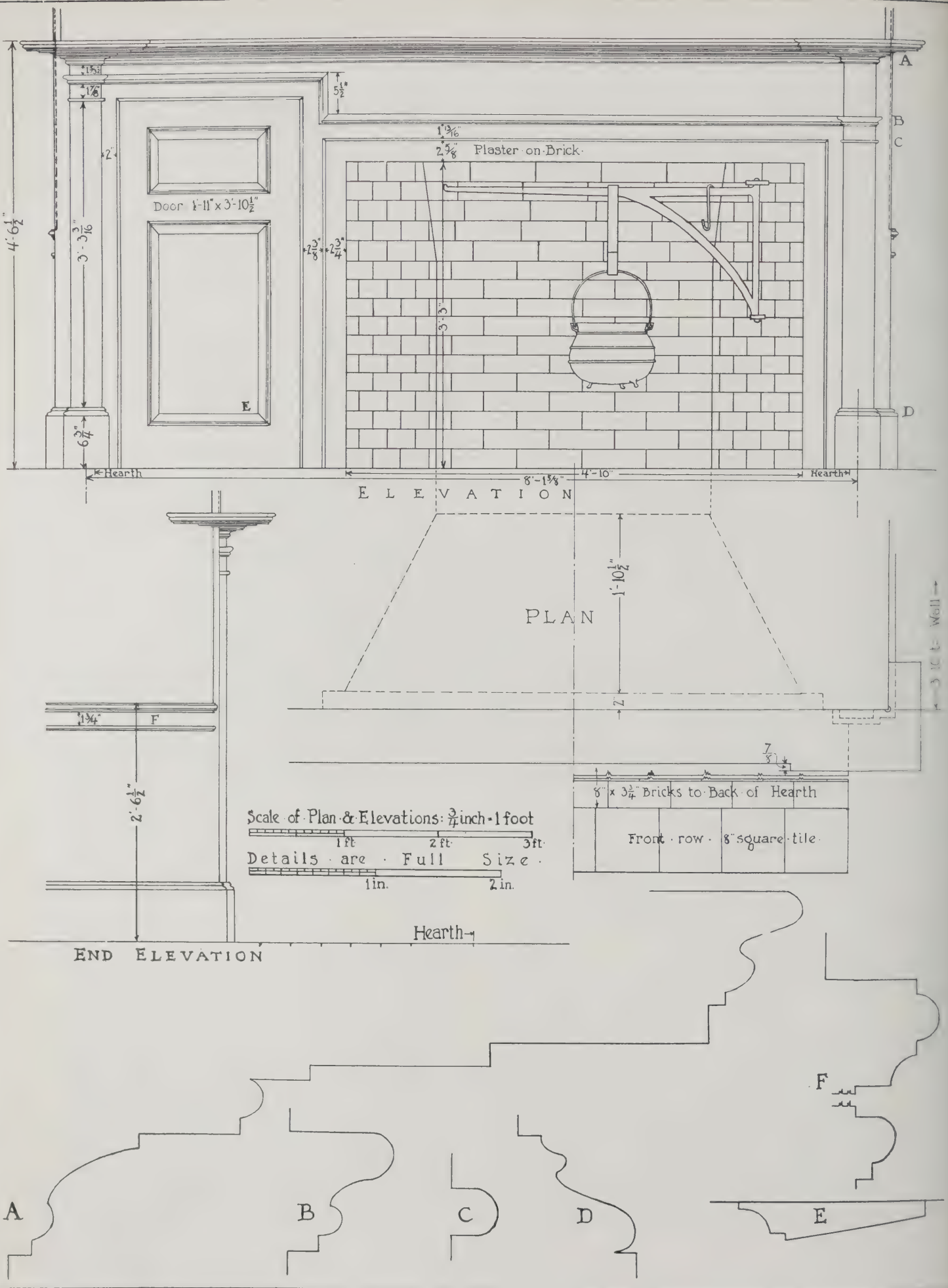
MEASURED AND DRAWN BY

HENRY NOYES OTIS



MANTEL IN THE STEPHEN PUTNAM HOUSE, DANVERS, MASS.
BUILT IN 1812

THIS mantel is in what is now called the "long room" of the old Stephen Putnam house, built in 1812. This room, which is 15 by 25 feet in size, is particularly noted for an open stairway with interesting banisters which ascends to the second floor across one end. The small door at the left of this fireplace, which is included in the woodwork of the fireplace, covers a brick oven, not an uncommon arrangement in farmhouses of this period. Behind this oven, in what was the kitchen of the house, is another larger brick oven also connected with an adjoining fireplace. All of the interior woodwork of this house, still in perfect condition, wainscoting, door trim and mantelpieces, is soft pine, hand-cut and fastened with hand-made nails.



MANTEL IN STEPHEN PUTNAM HOUSE DANVERS MASSACHUSETTS

Measured & Drawn By Henry Noyes Otis

EARLY AMERICAN DETAILS

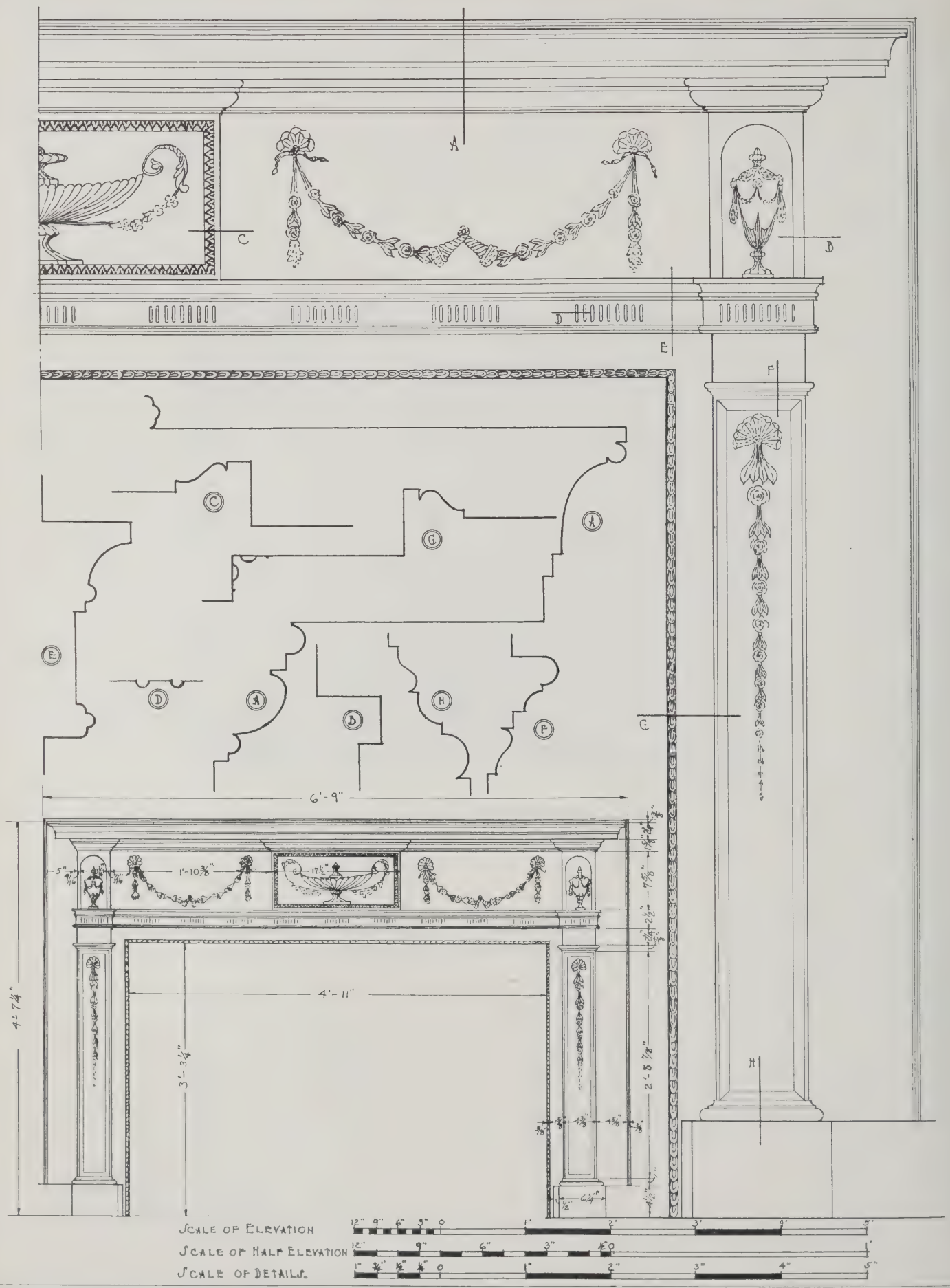
MEASURED AND DRAWN BY

A. J. HARRIMAN



PARLOR MANTEL, GEN. McLELLAN HOUSE, TOPSHAM, MAINE
BUILT IN 1793

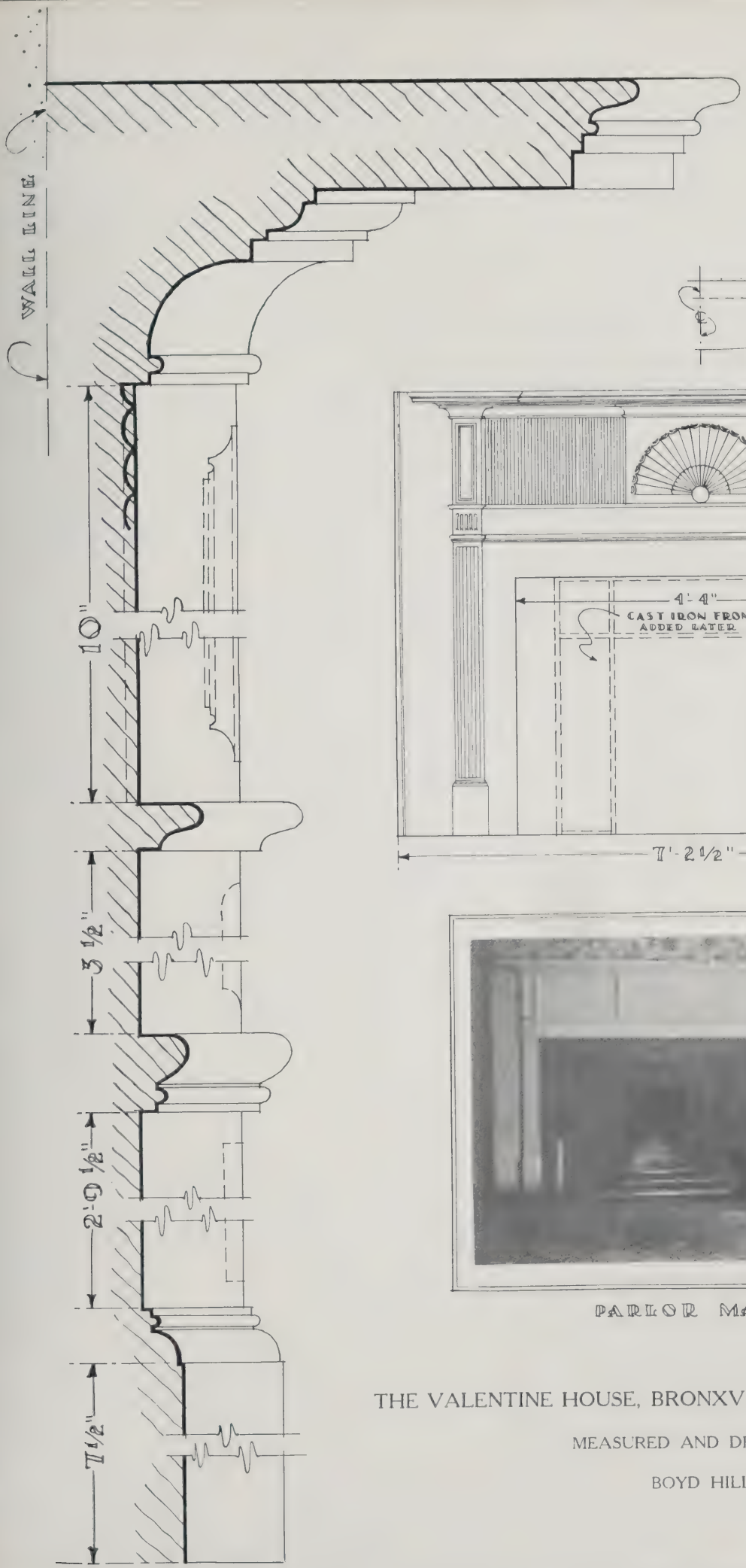
ALTHOUGH the fireplace itself has been bricked up and a stovepipe hole with a Franklin grate substituted for the hospitable hearth, the mantelpiece itself has survived the past century in an almost perfect condition. The charm of the ornament and also the general proportions of the mantel and the profile of the mouldings suggest strongly the influence of the Adam period, in vogue in England at that time. Rarely does one see a mantel which displays such refinement in design and exceptional precision in workmanship. The graceful mouldings are exquisitely carved, and the applied work, festoons, urns, horns of plenty and straight hanging garlands of slender grace, are unusually well drawn. A bead and pearl ornament originally separated the cymatium from the corona, which had an oak leaf and acorn applied ornament, the same as on the cornice over the doorway of this room. Groups of vertical flutings at regular intervals adorn the architrave above the fireplace, while an applied chain moulding runs about the fireplace opening. The slightly projecting oblong central panel with leaf ogee contains an urn. The mantel has been credited to McIntire, but the authenticity of this attribution has not yet been definitely proved.

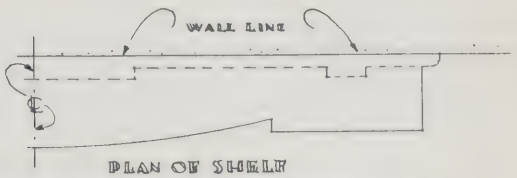


MAINE COLONIAL SERIES

MANTEL OF THE GEN. MC LELLAN HOUSE
BUILT IN 1793 TOPSHAM, ME.

MEASURED AND DRAWN BY
A. J. HARRIMAN.



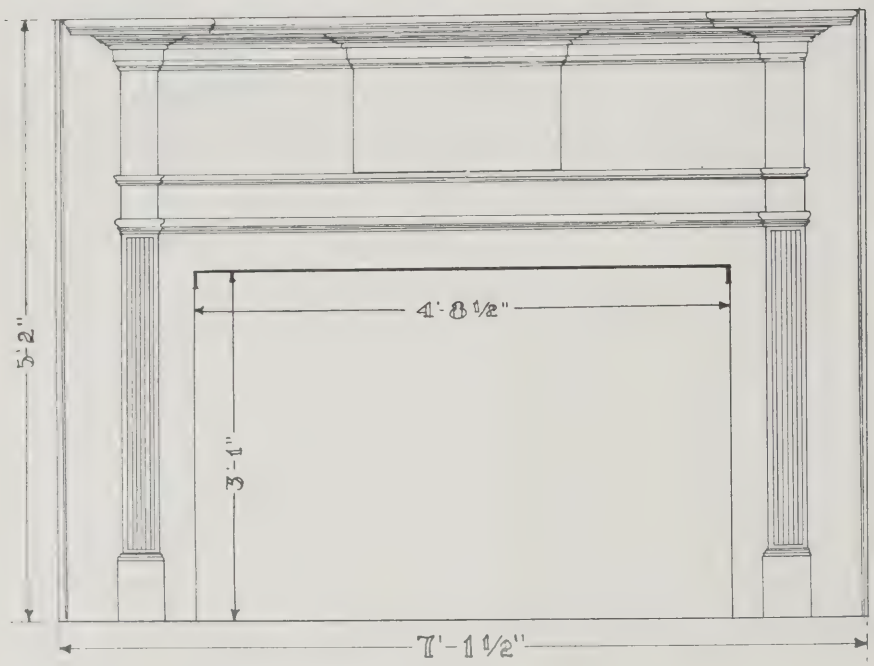


PARLOR MANTEL

THE VALENTINE HOUSE, BRONXVILLE, N. Y.; BUILT IN 1790

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LIVING ROOM MANTEL

THE VALENTINE HOUSE, BRONXVILLE, N. Y.; BUILT IN 1790

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EARLY AMERICAN DETAILS

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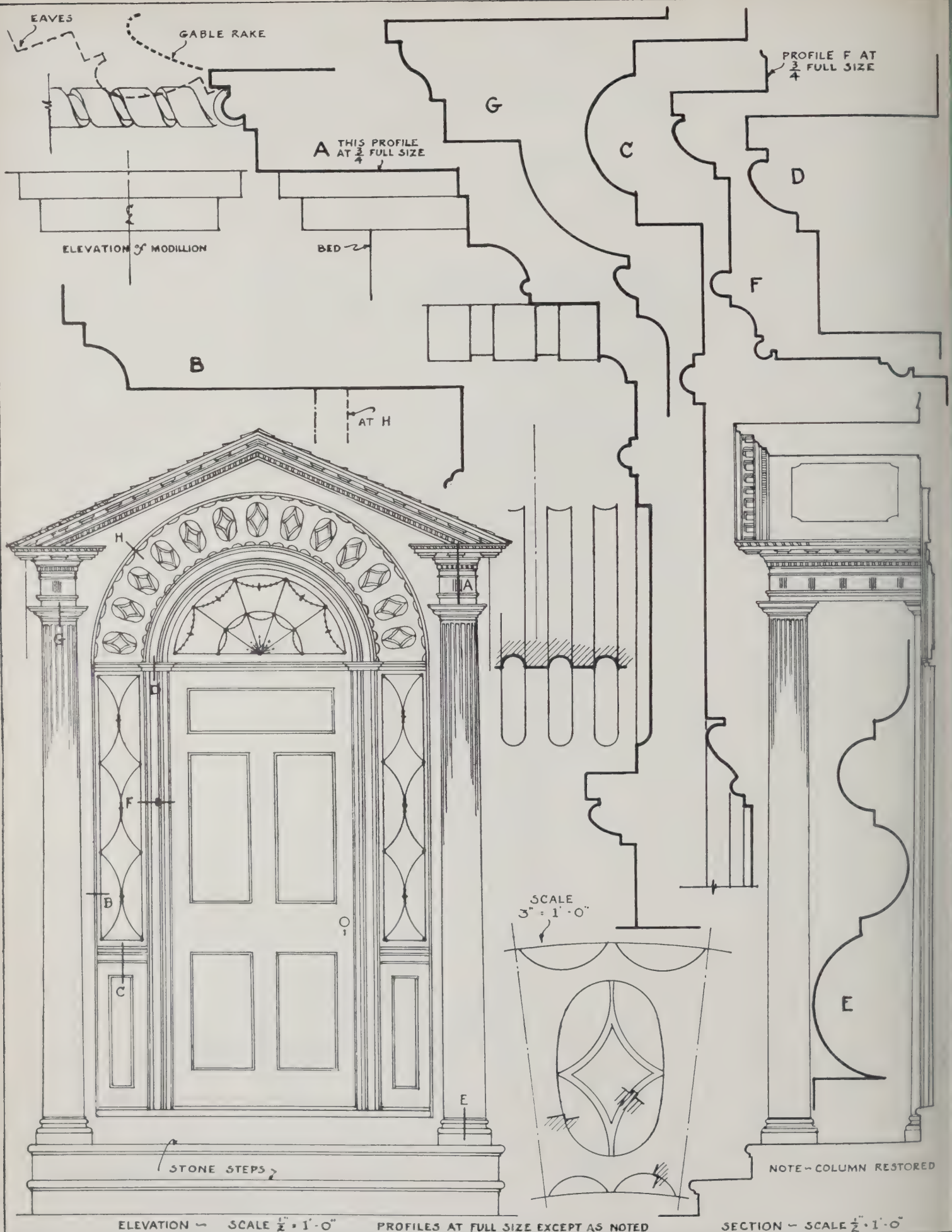
MYRON BEMENT SMITH



ENTRANCE PORCH, THE WHEELER-BEECHER HOUSE, BETHANY, CONN.; BUILT IN 1805

DAVID HOADLEY, ARCHITECT

IN the February, 1927, issue of THE ARCHITECTURAL FORUM other details of this late Colonial farmhouse were published. Characteristic of houses of this period, much importance was attached to the design of the entrance door and window above. In this example there are found a pleasing consistency in scale and harmony in the design of these two principal architectural features of an otherwise simple farmhouse. Although not elaborate in design, the leaded glass of the overhead and side lights shows a pleasing restraint and simplicity. The one naïve touch in an otherwise sophisticated design is the oval cut panels in the lunette above the fanlight. The panels in the ceiling have always been painted Prussian blue. The door has flush panels separated from the rails and stiles by a small flush bead. The bastard square columns are a Victorian replacement; those shown on the plate, restored from the pilaster profile, are architecturally consistent.



EARLY ARCHITECTURE OF CONNECTICUT

ENTRANCE PORCH

Wheeler-Beecher House

Bethany, Conn.

David Hoadley Architect

MEASURED & DRAWN BY MYRON BEMENT SMITH

F.a.

THE ARCHITECTURAL FORUM



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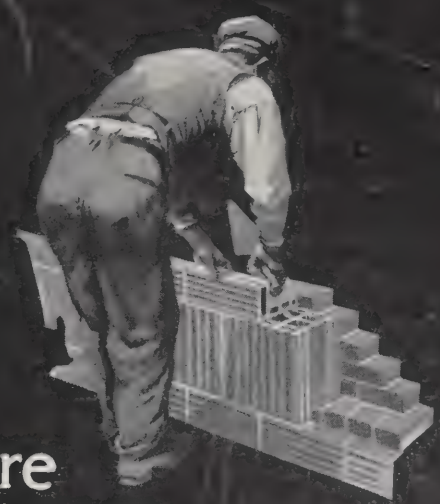
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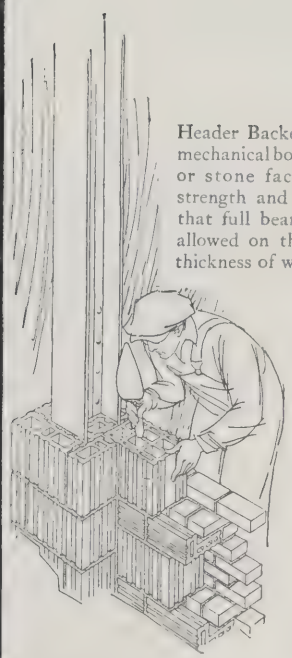
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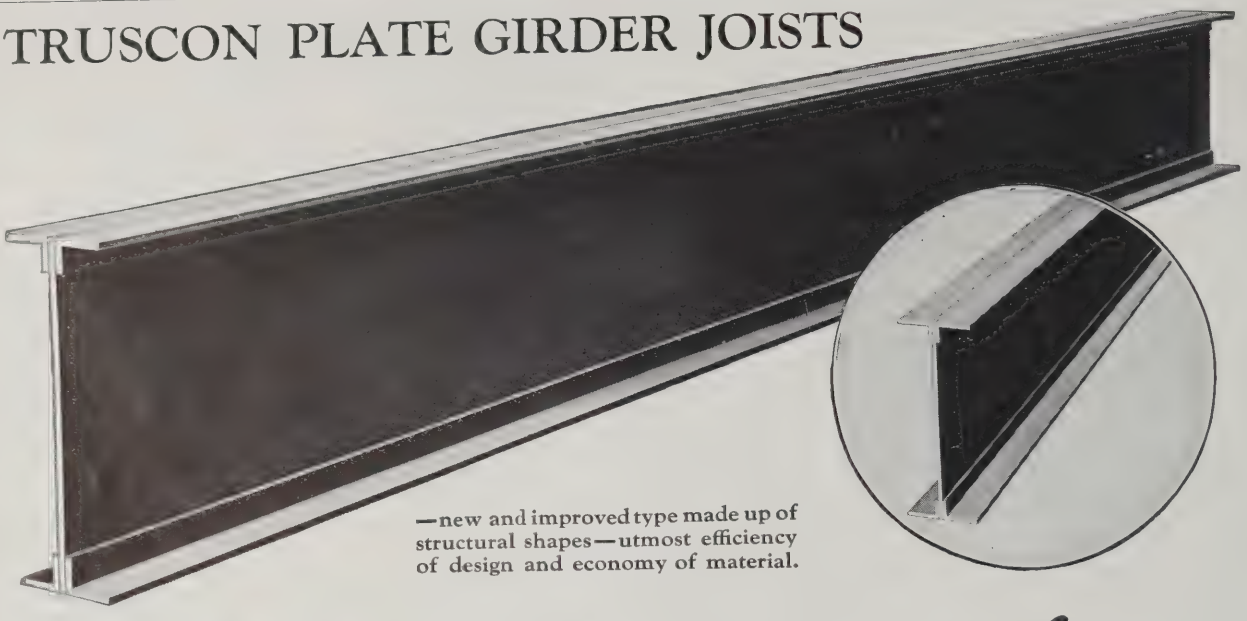
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Volume XLVI THE ARCHITECTURAL FORUM Number 6

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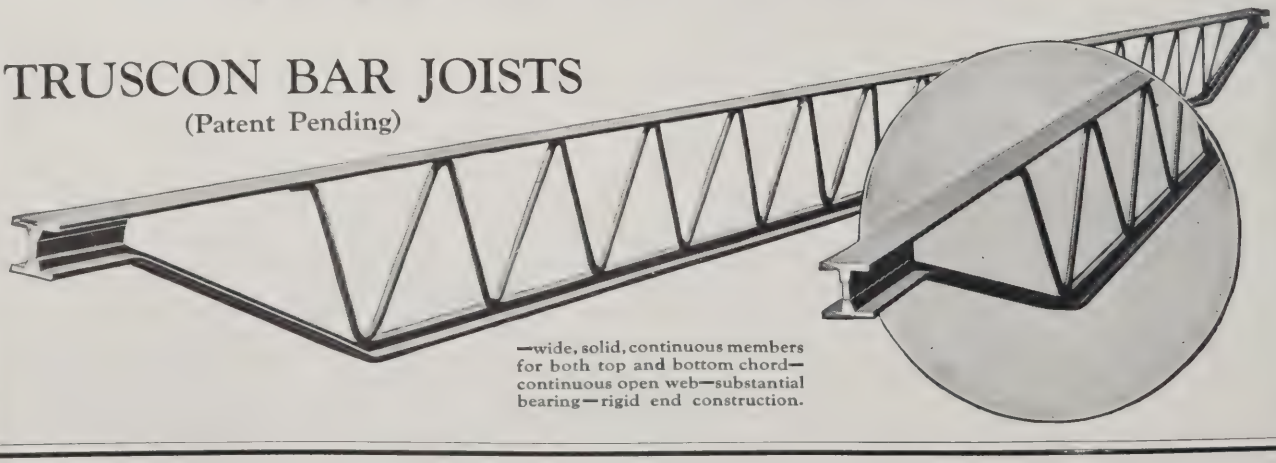
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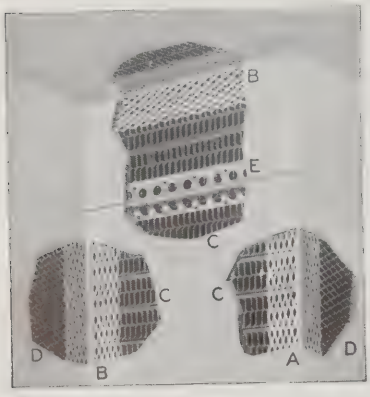
KNO-BURN Metal Lath for Boston-Statler supplied by Dillaby Fireproofing Company, Boston

Kno-Burn Metal Lath

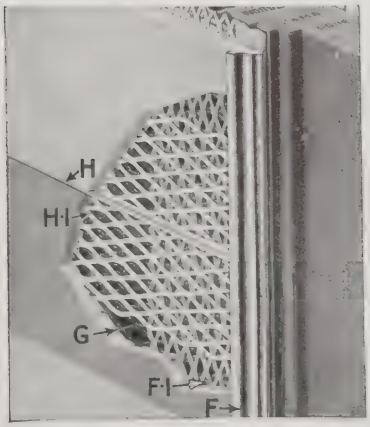
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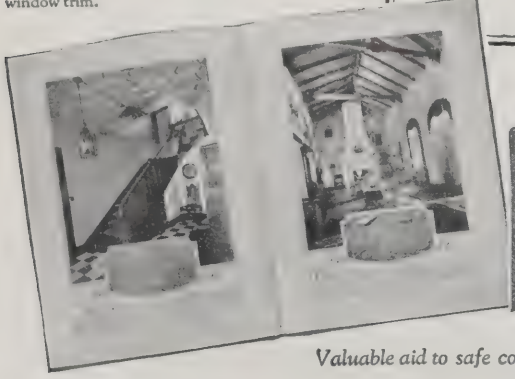
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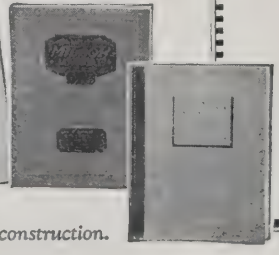
HE who ignores the supreme safety provided by metal lath construction and makes penny-wise substitutions, is haunted constantly by fear of cracked walls and ceilings, falling plaster and frequent, costly repairs. The inevitable settling of his building, or even the careless slamming of a door, may send ugly cracks staggering across his walls and ceilings—cracks that endanger lives and slash hundreds, perhaps thousands of dollars from the resale value of his property!

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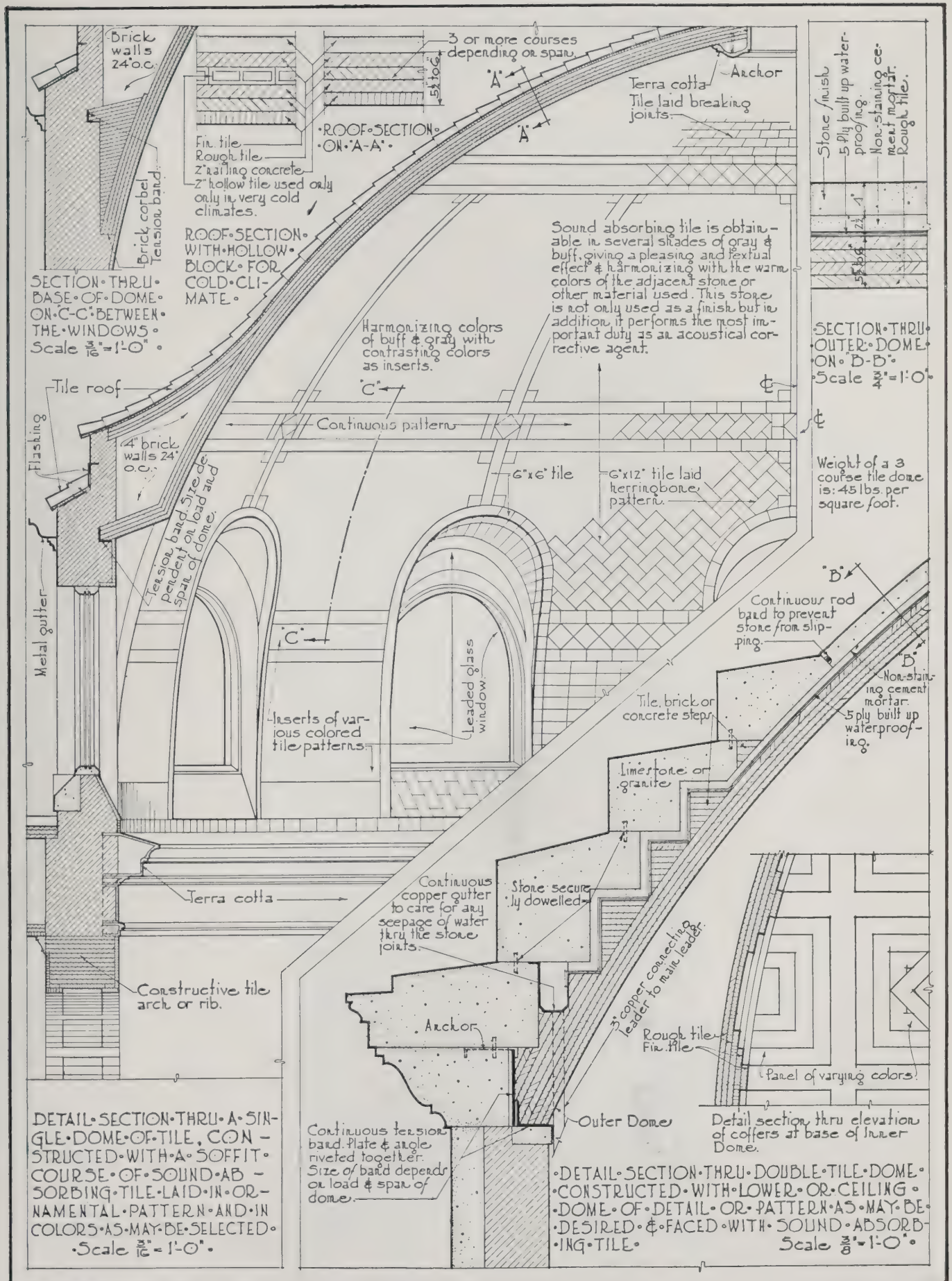
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DETAIL SHEET

Corbett Advises Designing Buildings for Night Illumination

"ARCHITECTURE OF THE NIGHT" SHOULD NOT BE AN AFTER CONSIDERATION BEST RESULTS OBTAINED WHEN INCORPORATED IN ORIGINAL PLANS

THE General Electric Company takes pride in presenting the constructive suggestions and ripe judgment of Mr. Harvey Wiley Corbett. Mr. Corbett is one of the first to give serious consideration to the exterior illumination of buildings. He has studied this phase of architectural design very deeply, and his knowledge and personal experience give unquestioned authority to his opinions. In the following interview he emphasizes the importance of designing buildings with a view to the best effects of floodlighting, and points out the disadvantages of leaving these considerations to the outcome of chance.

"The troubles of the poor architect never diminish but only multiply. Just when he thinks he has mastered the principles of the architecture of the Ancients, a whole lot of new commercial and mechanical problems are thrust upon him and he has to revamp all his ideas of architectural form, proportion, and mass to meet the practical needs of the day.

"A Greek temple basking in the sunshine of a Mediterranean summer day and reflected in the waters of an azure sea, inspires him with the hope of some day reproducing such a vision in his own country. The first opportunity to reconstruct this delightful vision is a twenty-story loft building capped by an elevator pent house and pressure tanks, and his vision of ancient Greece restored ends in a galvanized iron temple enclosing the aforementioned pent house and tanks. Now a newer and still more confusing problem has been added to his already complete store of problems. Night illumination of buildings has become a very popular and effective element in design, particularly in buildings of the sky-scraper type. Having designed his architecture, cornices, mouldings, and details with due regard for an angle of sunshine falling from above at 45 degrees over the left shoulder, he now finds himself confronted with beams of night light shooting upward at a dozen different angles, completely reversing his entire design problem so that every carefully studied shadow becomes a high light and every studied proportion is turned upside down. The question arises, 'can we design our buildings to be equally effective for the eight or ten hours of daylight and at the same time be architecturally satisfactory for a few hours of specially illuminated night time?'

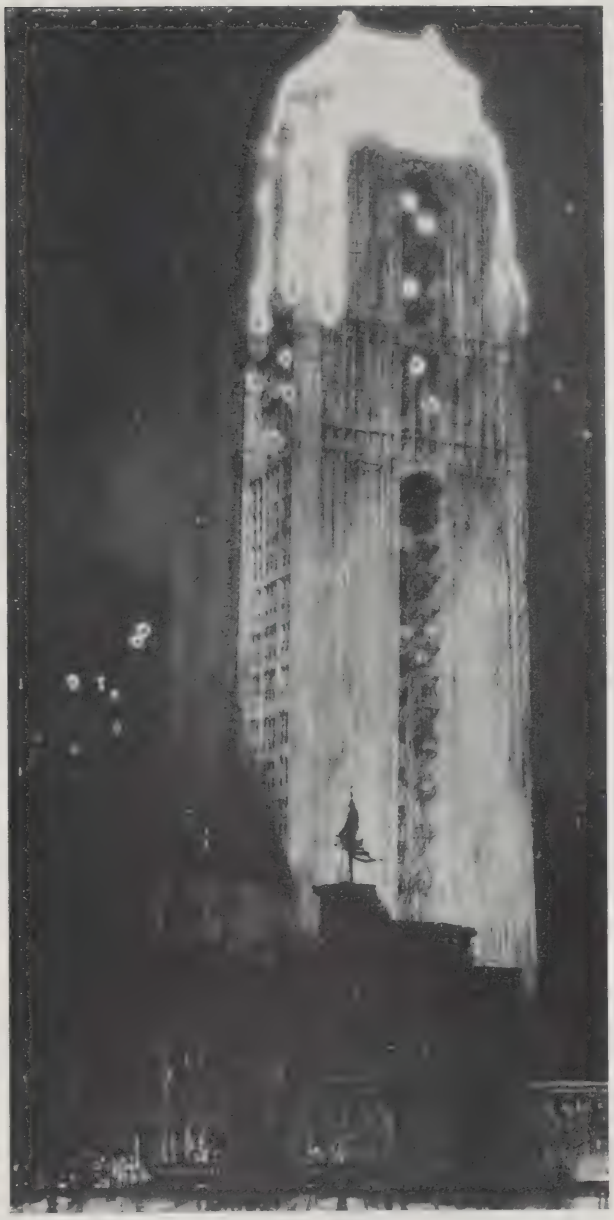


Floodlighting is not to be restricted to the largest cities, as evidenced by Helmle & Corbett's effective design for the illumination of the new Pennsylvania Power & Light Co. Building at Allentown. G. E. floodlighting will transform this building into a magnificent beacon.

"From a critical point of view, more attention is given, more comments are made, more interest is aroused when buildings are artificially illuminated than during the natural daylight. Night illumination attracts attention like a spotlight on a stage. Buildings

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are noticed and commented on which otherwise would be passed by the casual observer without a thought, so that from one point of view the problem of architectural design with respect to night illumination is a very serious one, demanding a great deal of study and research. It will undoubtedly become of ever-increasing importance and one which no architect can afford entirely to overlook. Fortunately, modern commercial demands have made many of the old familiar architectural forms which have come down to us from a past generation inappropriate in modern work. In high buildings particularly, the cornice has practically disappeared. Many other familiar forms have gone with it. Mass, proportion, silhouette, and color have become the commanding factors, and they are not so materially influenced by reversing the angle of light; but we cannot let the matter rest with chance, simply hoping that the result of night illumination may be good. We must design those portions of the building which are to be illuminated with all due respect and regard for this new element which has become so important a factor in the appearance of the building.



Helmle & Corbett's famous Bush Tower. G. E. floodlighting adds a mystic quality to the beauty of this building after dark, and, as Mr. Corbett says, "gives the illuminated portion the appearance of a jewel in a setting."

"It happens too often in the design of buildings that illumination is an after consideration. The architect finds that spaces on which illumination is possible are not necessarily pleasing in mass and proportion, whereas with the thought in mind of planning these spaces for illumination, simple modifications in the plans would have made these same spaces pleasing in proportion. Architectural detail has not as much significance as one might imagine. Since the illuminating element is composed of many sources of light, the shadows are seldom equally divided, and the effect is more one of diffusion than of exactness.

"The problem, to begin with, is one of mass and proportion. That portion of the building which is illuminated stands out clearly against a dark sky and is separated quite distinctly from the portion of the building unilluminated. Special study must of course be given to the line of transition between these two portions. There is a tendency for the illuminated part to float unsupported and thereby loose its structural significance. The form of the illuminated portion should be so tied in with the rest of the building that it should appear as a jewel in a setting, forming a coherent part of the whole structure. In order to illuminate a building, two methods are generally in vogue,—one by means of floodlights placed on the set-backs or terraces, and the other by means of similar units placed on other buildings across the street or placed on the ground. The latter form is rarely possible in connection with commercial buildings, but it has been used with great success in the lighting of government buildings and other public structures. It will be readily seen that if there is a choice in the location of the set-backs and their depth, it has a very direct influence on the effectiveness of the lighting."

This is the second of a series of interviews with prominent architects published by General Electric Company, Schenectady, N. Y., to promote study and provoke discussion of the architectural possibilities of night illumination—a new instrument serving an ancient art.

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Or—if preliminary plans are under way—let us sketch-plan a miniature floor plan layout of maximum storage capacity. That is our free service to architects.

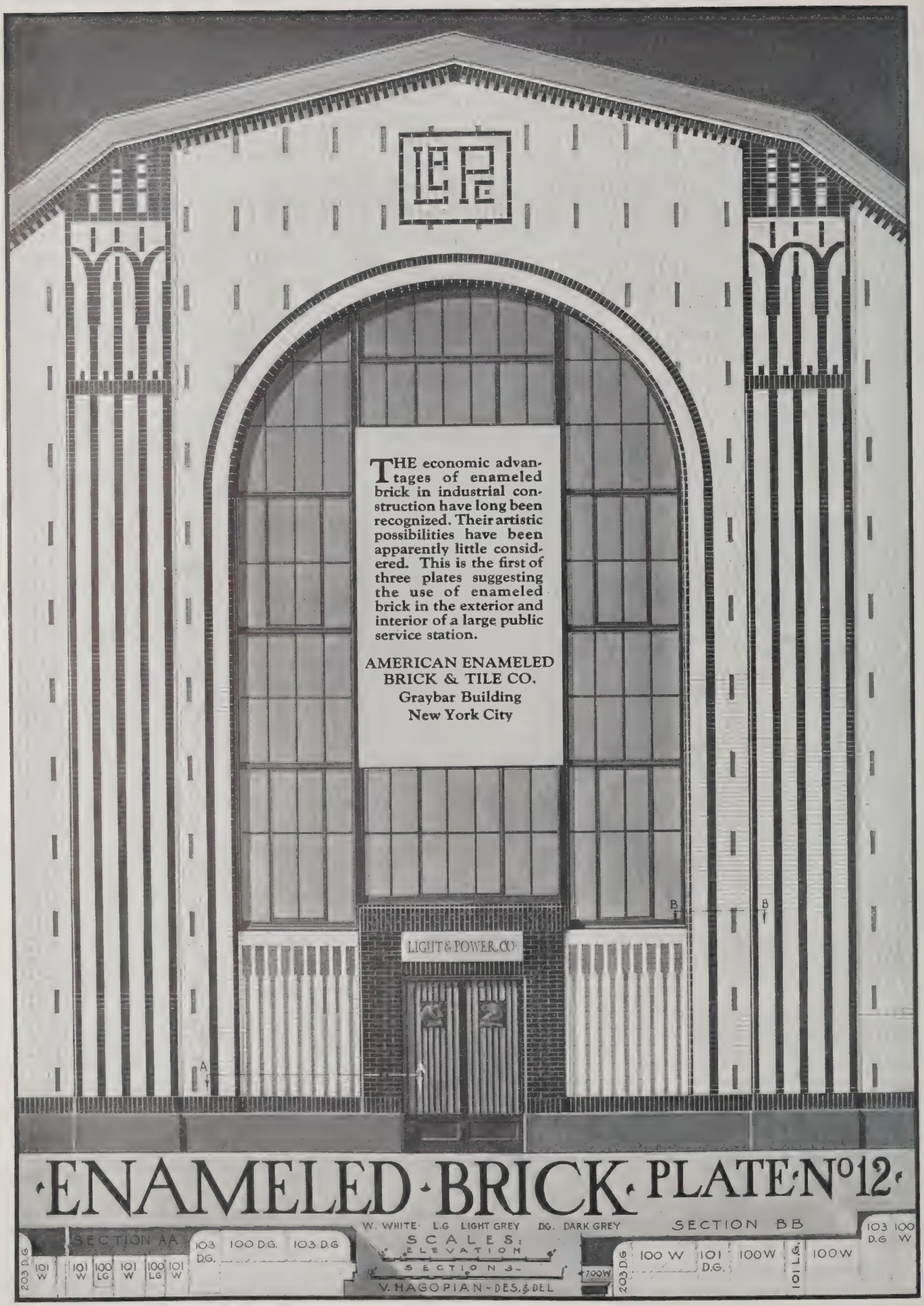


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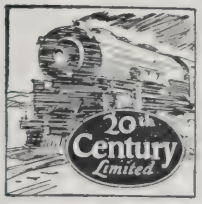
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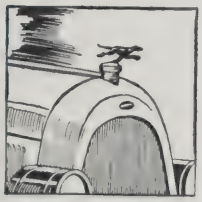
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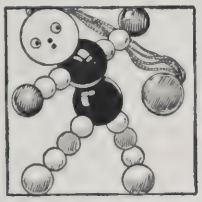
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Useful detail sheets and data book

This handbook has been written for architects, contractors and builders. It deals primarily with construction and gives plans and diagrams showing best approved methods of window and display space arrangement. The detail drawings will be welcomed by specification writers. A word from you will bring them—promptly.



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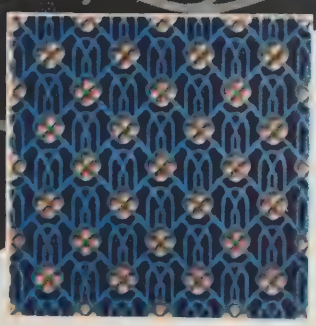
For the bedroom, a floor of the dainty carpet pattern shown below may be most appropriate, either in this or other color combinations. This design is Moulded Inlaid No. 5442. The 1927 Armstrong Pattern Book shows many other distinctive patterns.



For specifications, write for the 1927 file-size edition of "Armstrong's Linoleum Floors" or consult Sweet's Architectural Catalogue, pages 1400 to 1405.

Below is Armstrong's Green Jaspé No. 19.

Above is Armstrong's Marble Inlaid No. 84. The blocks are 9 × 9 inches.





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As a designer of apartments, you know the importance of planning things that will appeal to the prospective tenant. So you specify such eye-catchers as rough textured walls, an arched doorway, or a built-in bookcase, perhaps.

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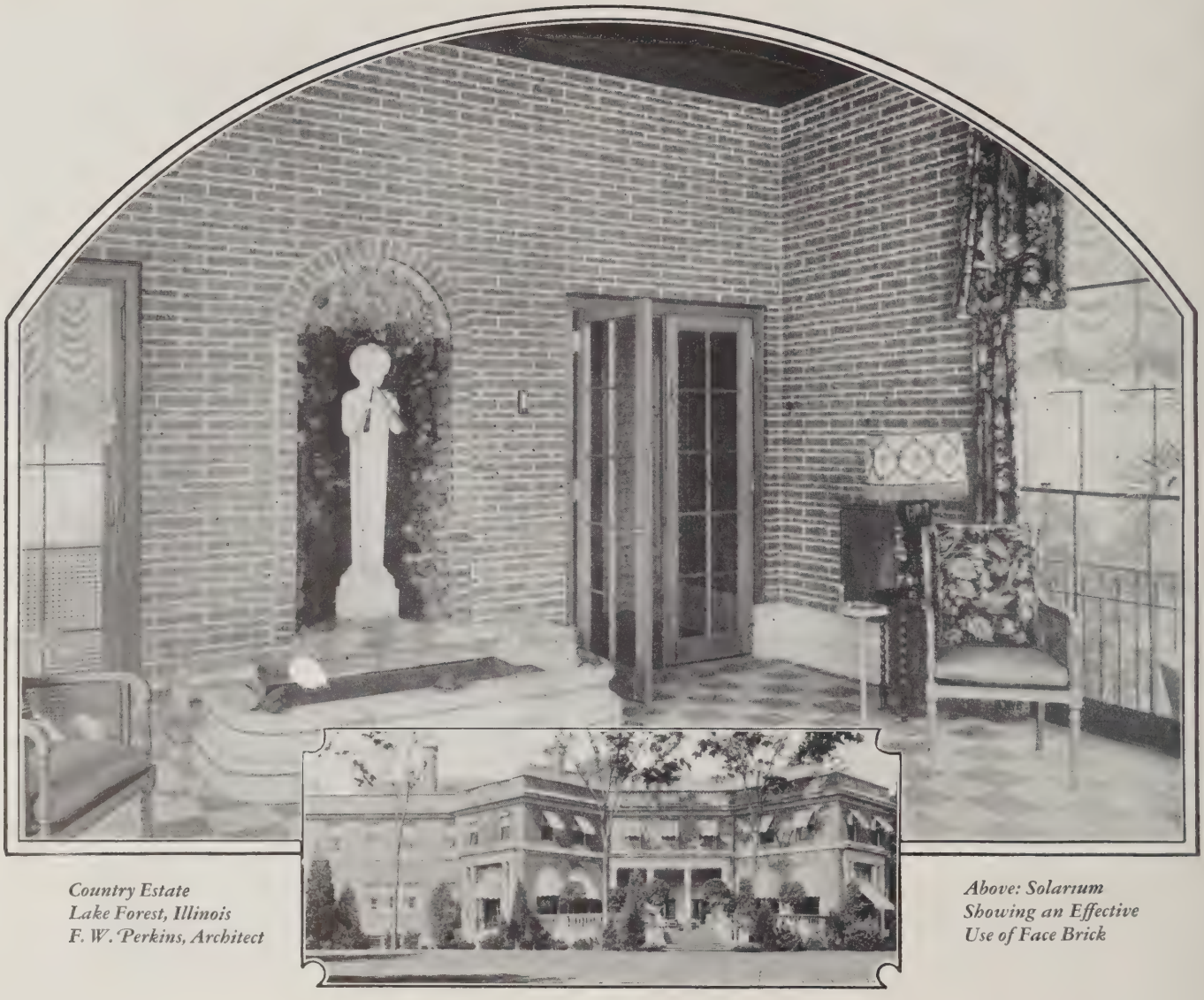
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F. W. Perkins, Architect

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Architect, Baum

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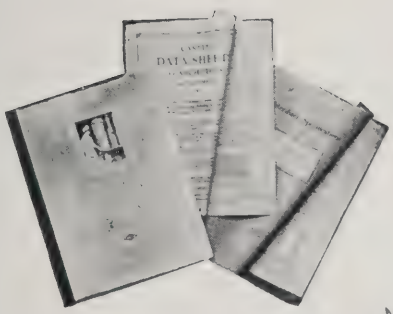
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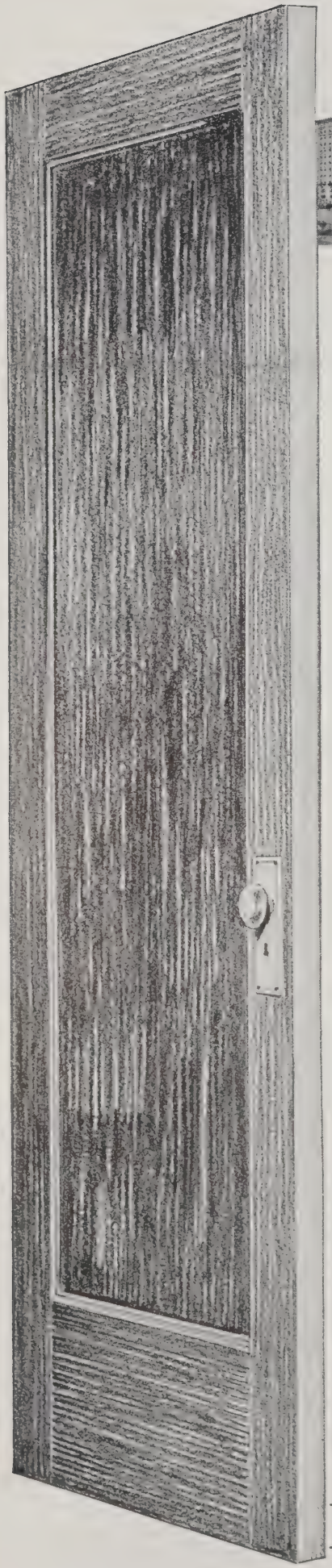
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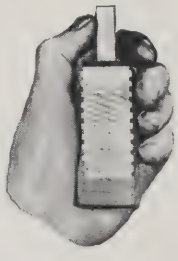
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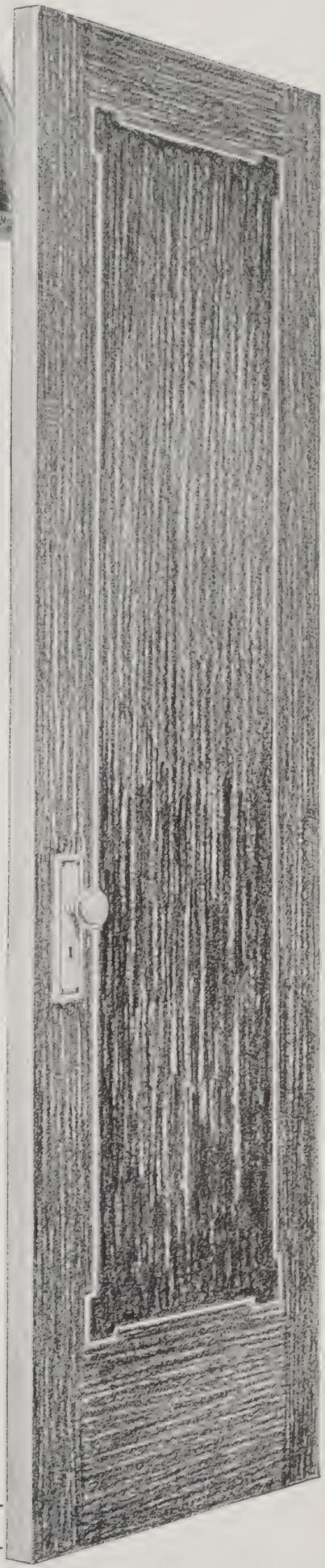


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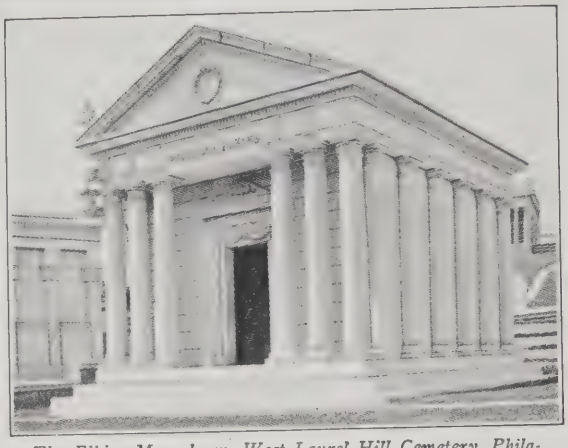
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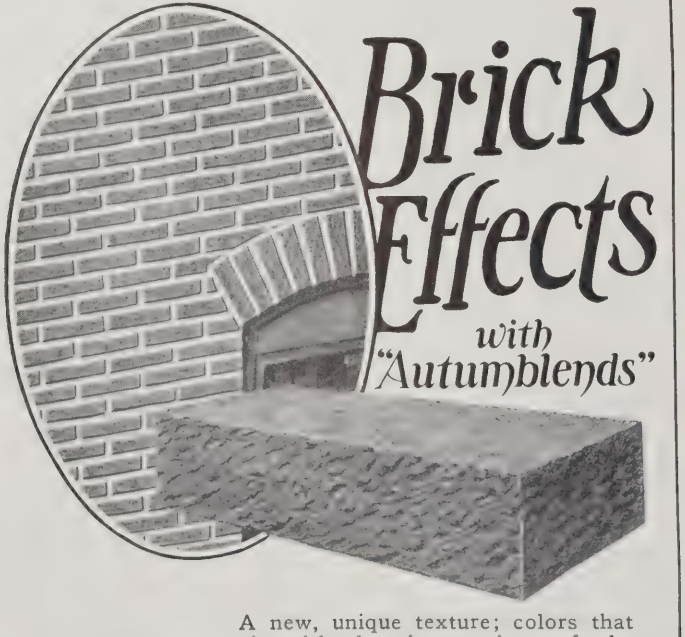


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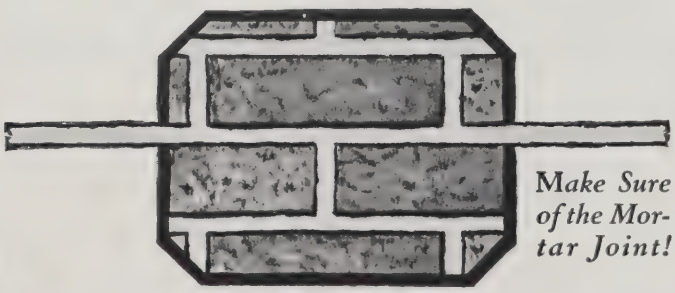
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GETTING CHARACTER INTO BRICKWORK

Thirty years ago ideal brickwork was obtained when a wall was absolutely smooth and as nearly as possible of one unvarying hue, the mortar of its joints being carefully tinted to precisely the color of the brick themselves. Constantly improving standards of architectural taste and growing appreciation of the superb brickwork of the past have changed all this. The best architects now insist that their brickwork be given architectural character, and fully as vital as the color and texture of the brick themselves is the color of the mortar used, the color no longer being chosen to agree exactly with the brick but to present that interesting contrast and richness of variety which it is the function of color to supply.



Pecora Dark Brown Mortar Stain

These three panels, for example, show a single type of brick made by the Western Brick Co., variety and interest being given by using mortar of different colors. From the variety of colors made possible by using Pecora Mortar Stains it would be easy to secure, even when using the same brick, a wide range of effects, particularly since added to the variety to be obtained by differences in color there is the vast variety to be had by using different "bonds,"—Flemish bond, English bond, clip bond, and the like, and the almost equally great variety of joints,—raked joints, flush joints, etc.



Pecora Black Mortar Stain

Later plates will illustrate the same principle applied to popular brick of other important manufacturers. The complete series of Mortar Color Design Studies will shortly be available and will be sent without charge to any architect requesting it.



Pecora Red Mortar Stain

ONE OF A SERIES BEING PUBLISHED IN THE ARCHITECTURAL FORUM

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FIFTH AND SEDGLEY AVENUE
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Est 1862 by Smith Bowen Incorporated 1911



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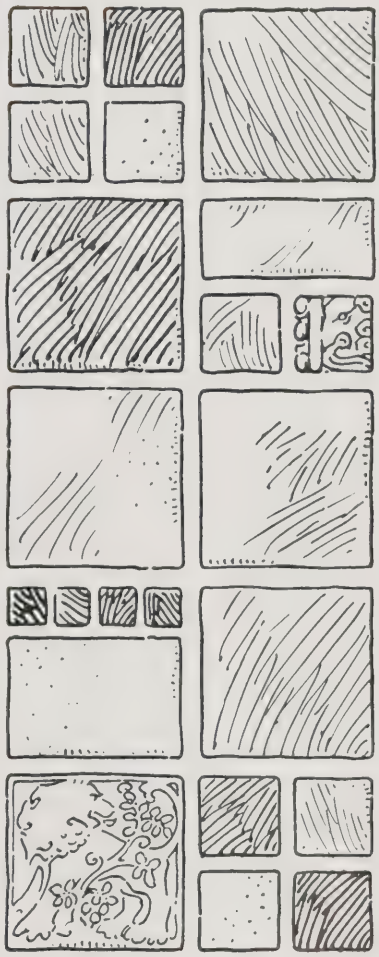
These ten subsidiary companies operate the eleven mills which comprise the International System:

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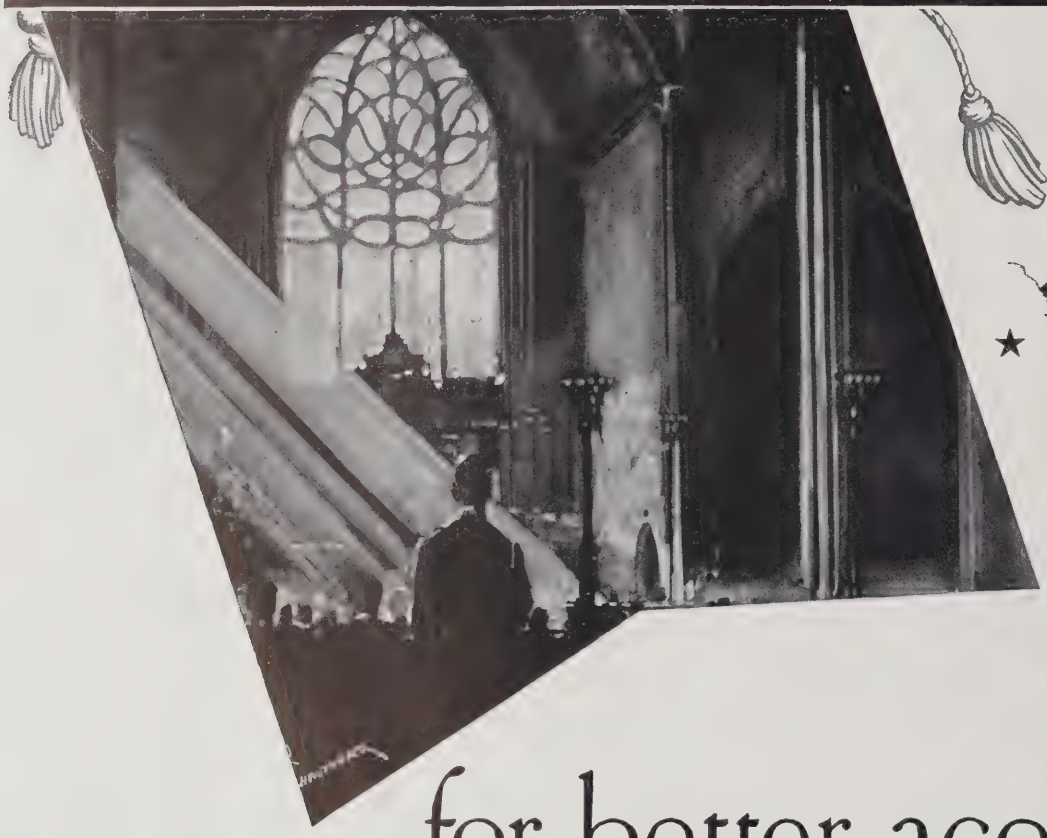
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Pen sketch of entrance, East End Christian Church of Pittsburgh, Pa. It has three-coat soundprooft Banner Walls.

Architect: V. A. Rigaumont. Plastering Contractor; Dougherty & Jennings.

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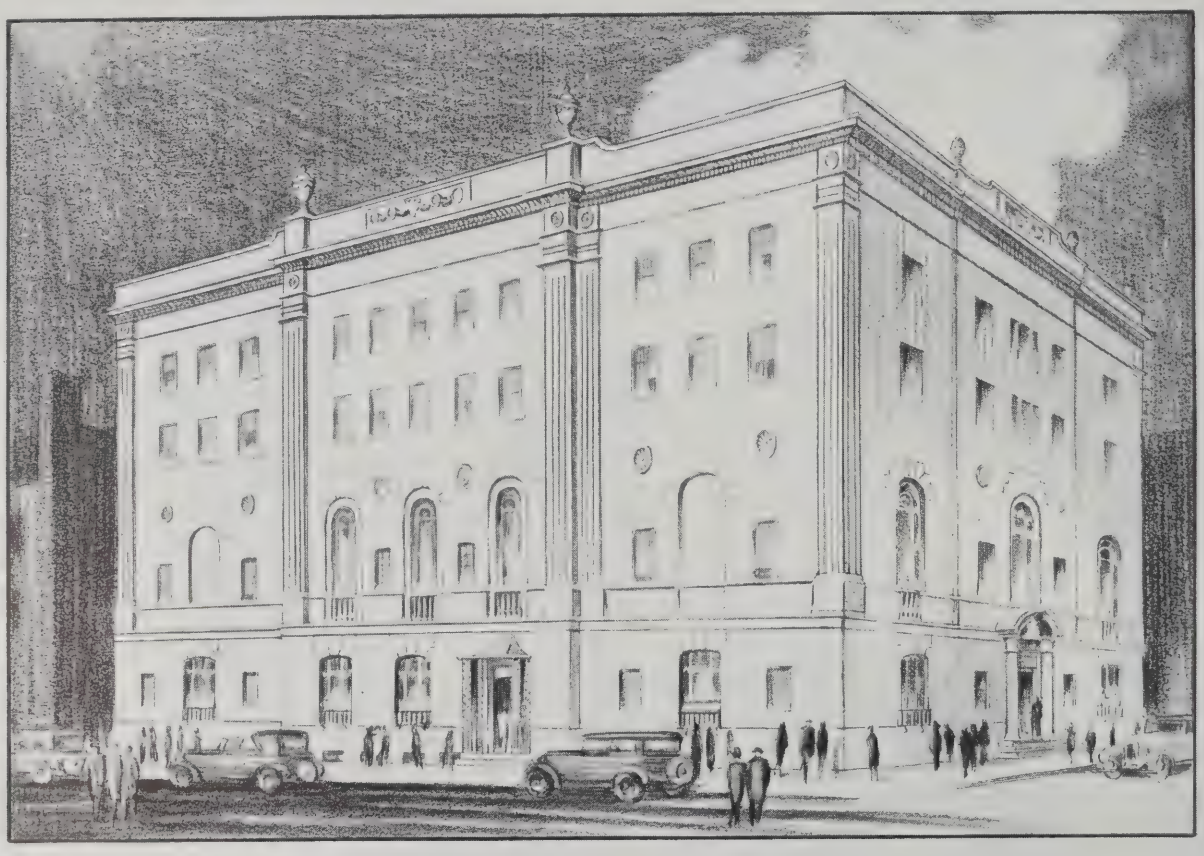
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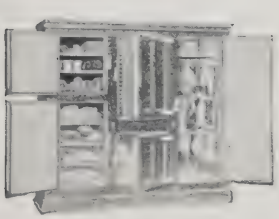
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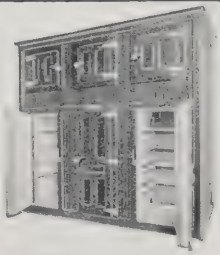
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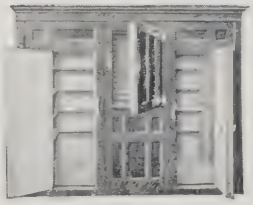
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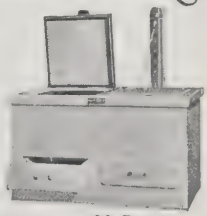
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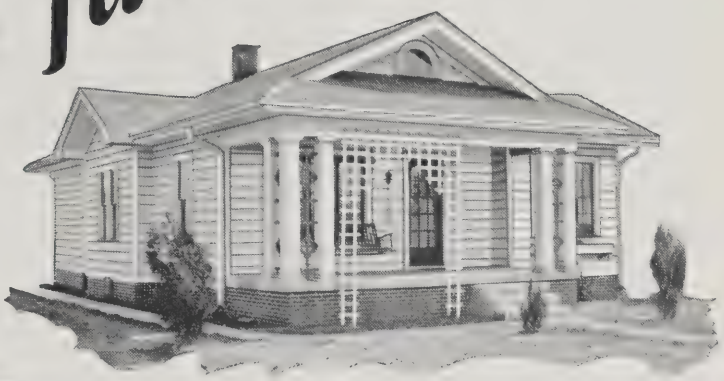
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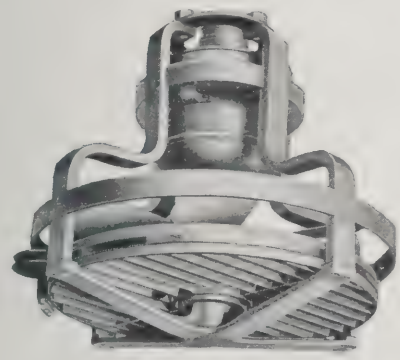
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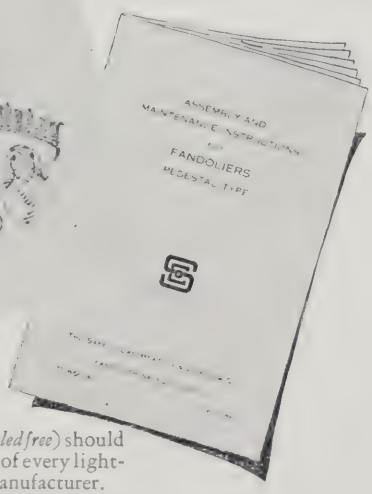
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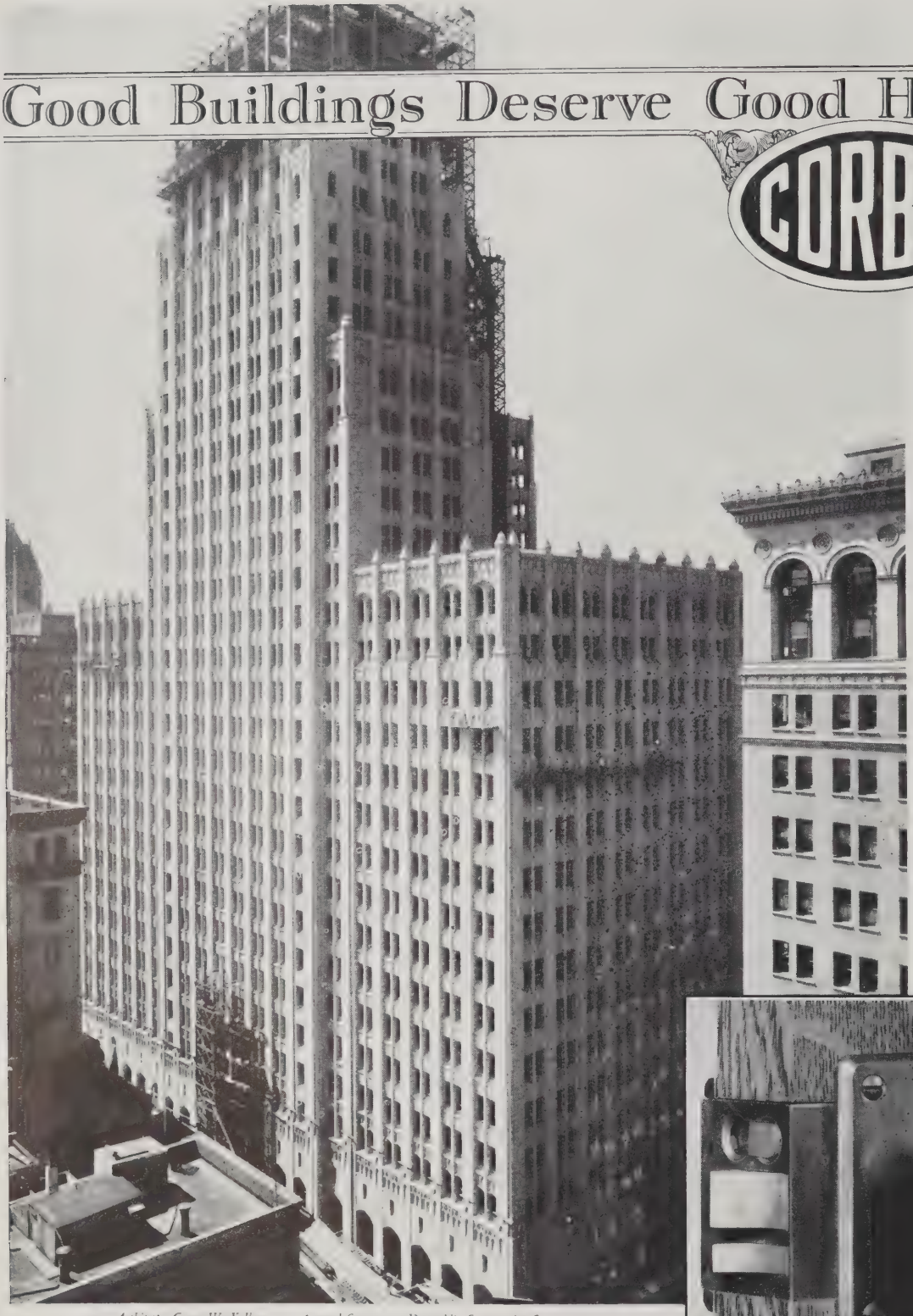
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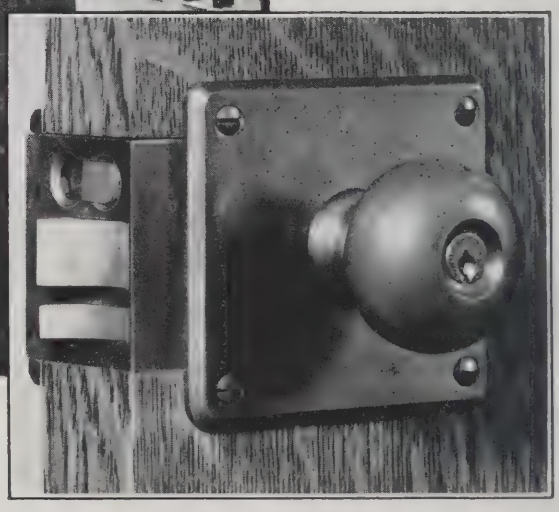
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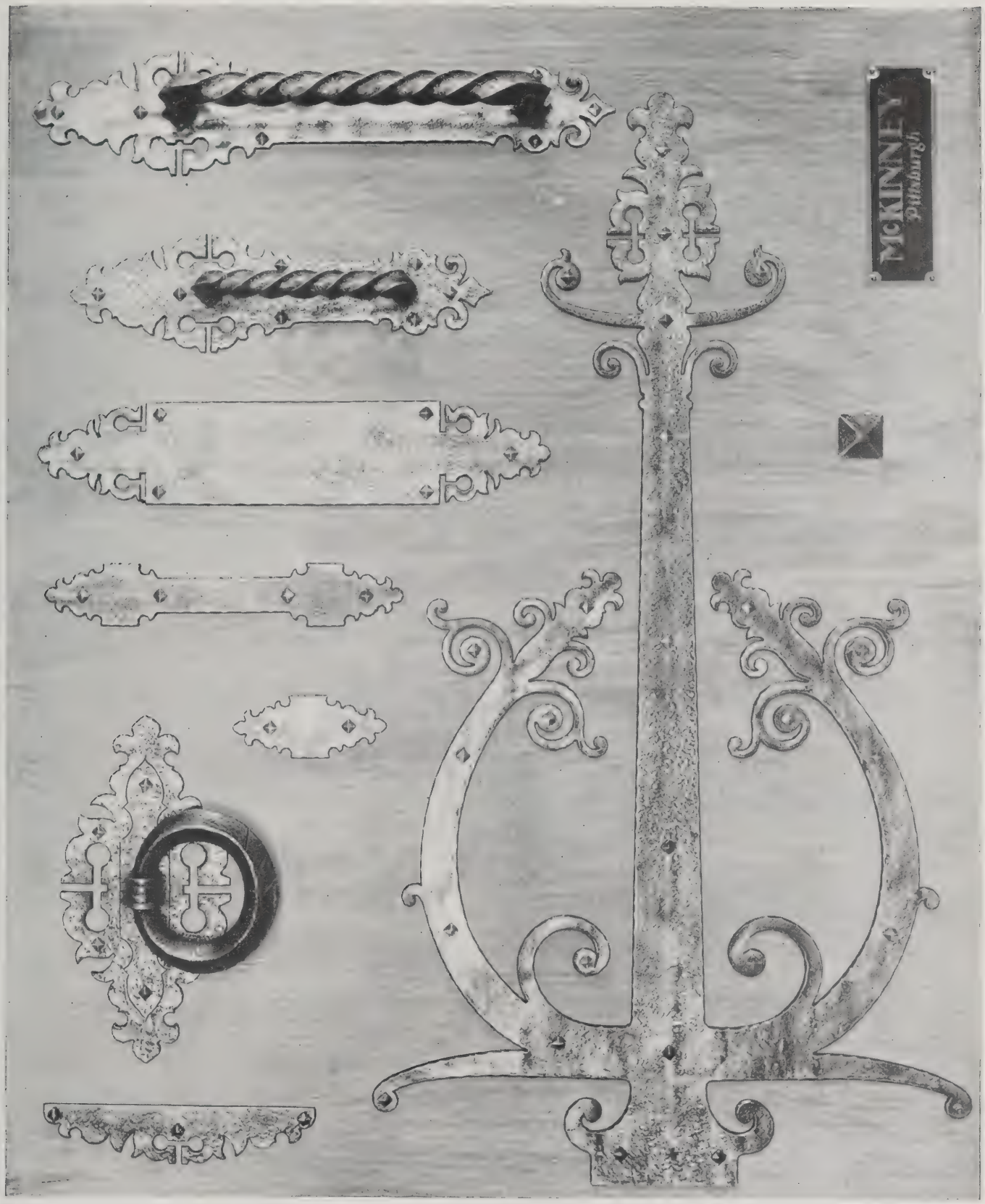
The prestige of the Russ Building is known from coast to coast. Wherever buildings must win such a nation-wide reputation for their fine service and appointments—Good Hardware—Corbin is remembered.

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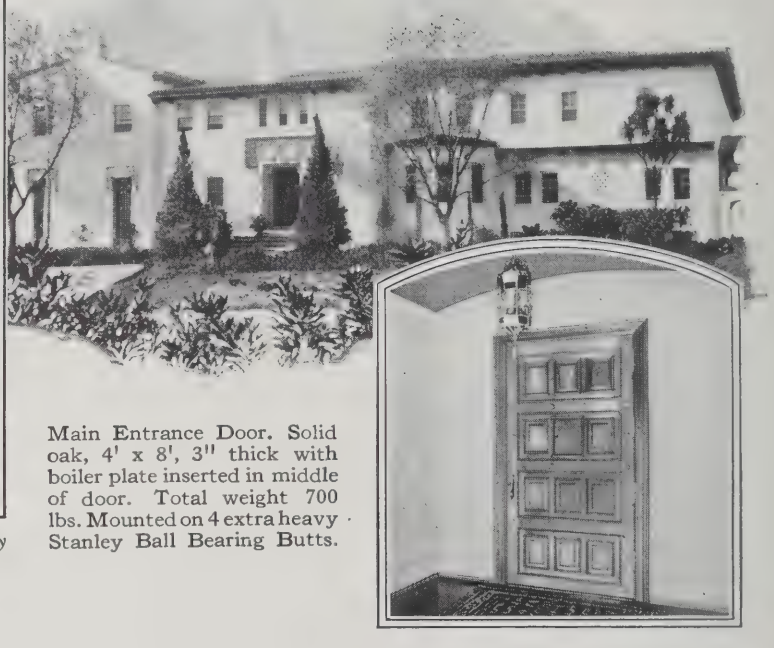
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ONE motif from McKinney's special hand wrought iron hardware for churches, theatres, schools, hotels and large residences. If architects interested in such projects will place their names on file with the Forge Division of McKinney Manufacturing Company, Pittsburgh, Penna., photographic portfolios showing available designs will be sent. Please write.



Apartment Building, No. 1, Sutton Place South, New York City
Cross and Cross, Architects
Equipped with Stanley Ball Bearing Paumelles.

Residence of Samuel K. Rindge, Los Angeles. Koerner and Gage, Los Angeles, Architects. Stanley Ball Bearing Butts used throughout.



Main Entrance Door. Solid oak, 4' x 8', 3" thick with boiler plate inserted in middle of door. Total weight 700 lbs. Mounted on 4 extra heavy Stanley Ball Bearing Butts.

Why heavy duty doors . . .
need Ball Bearing Butts

SOME doors on dwellings and public buildings open and close from 15,000 to 1,500,000 times a year. Plain bearing butts wear down under such frequency. Repairs or replacements become necessary.

Repairs and replacements are costly. These can be avoided by using butts with ball bearing joints.

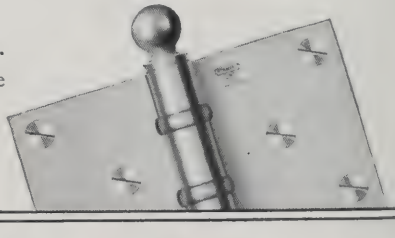
On all heavy doors, or where the doors are to receive high-frequency service, we recommend the use of ball bearing butts.

Stanley engineers have originated most butt and hinge improvements since 1852, including cold-rolled steel, the non-detachable (non-losable) washer, non-rising and self-lubricating pin, improved finish, and the use of ball bearings.

This wide experience enables us to make a product of uniformly high quality that sets the standard in butt manufacture. The Stanley trade-mark is on every butt.

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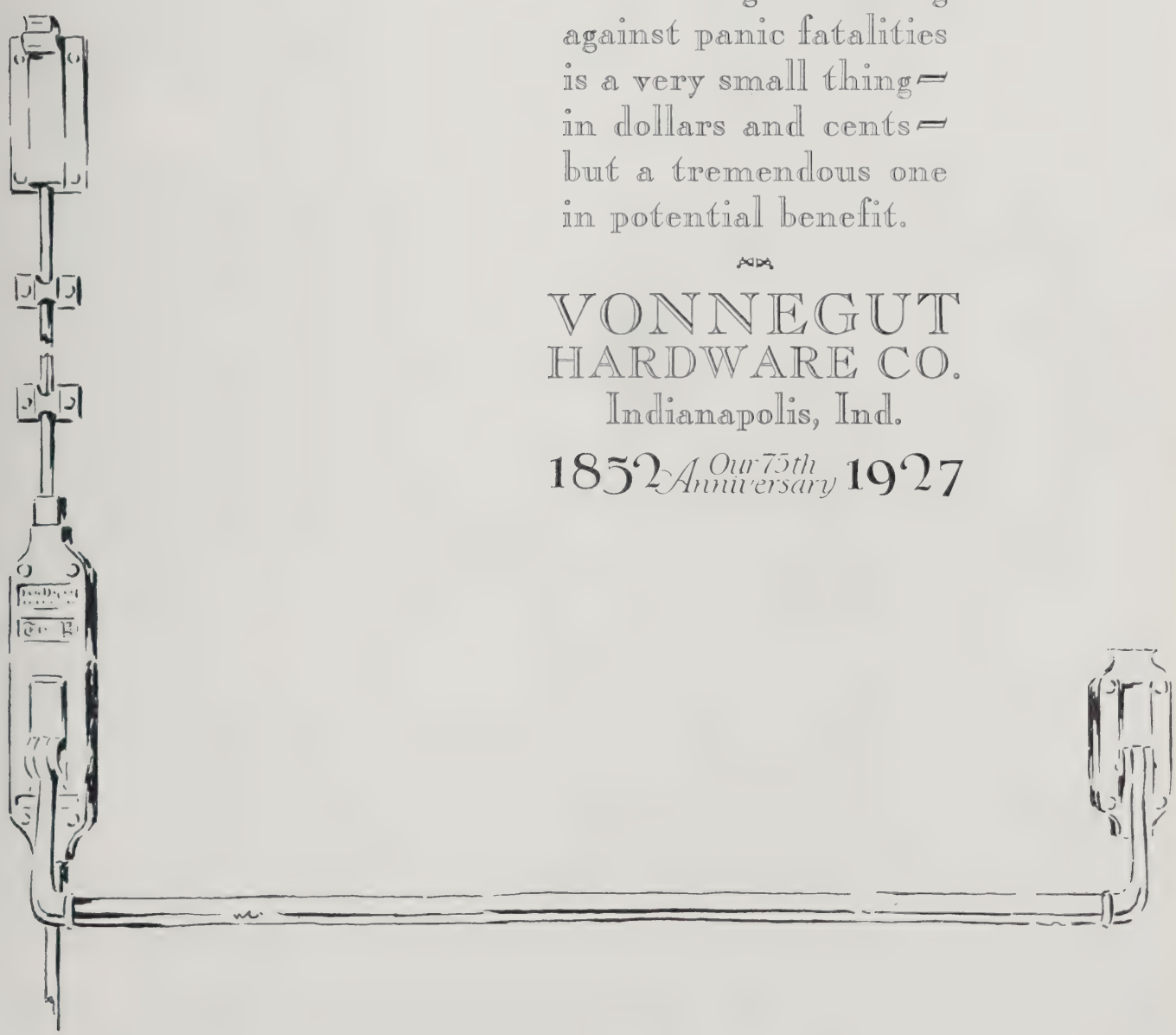
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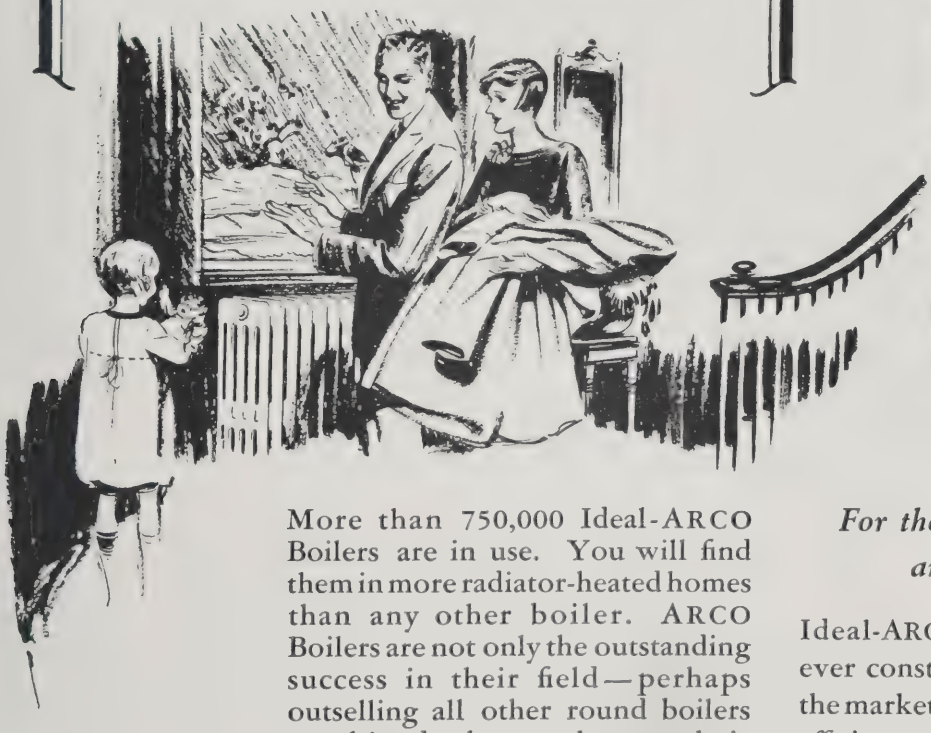
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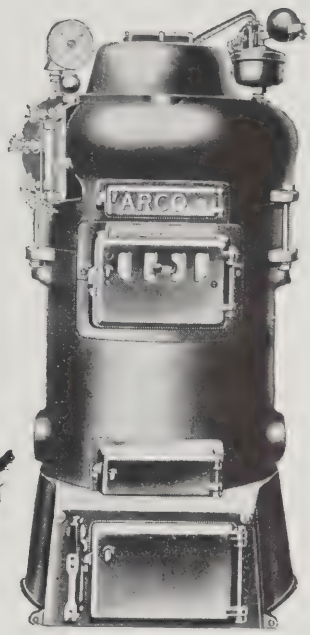
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BOOK DEPARTMENT

A Work on the Architecture of Old Charleston

Reviewed by HOWARD MAJOR

IN picking up "The Octagon Library of Early American Architecture, Volume I, Charleston, South Carolina," the first item of interest that strikes the reader is the advertisement. This proposes, when completed, a most stupendous program which will provide a complete survey of early American architecture. An architect possessing a set of these books, which will cover the entire area in which early American architecture flourished, will not need the hundreds of other volumes upon the same subject which contain such a tremendous amount of duplication of material. Therefore the complete work will mean a great financial saving to the coming generations of architects. To quote the advertisement upon the jacket will give a clear idea of what we may expect. "To make one complete work, carefully annotated and indexed, is the purpose that has inspired The Octagon Library. Some of the early American architectural work has been recorded in books long out of print. Some has been published in fugitive form. A great deal never has been recorded at all. The fact that this work has been undertaken very largely as a historical record has made it possible to include many buildings which hitherto have been closed to the seeker of measurements and the photographer by the owners, but which are now available."



Volume I before us, upon Charleston, contains approximately 280 illustrations. Volume X is proposed to be upon New York state. When we stop and consider the small number of old buildings in Charleston and the many throughout New York state we may well wonder if this stupendous program can be carried through. In other words, if the Charleston book has 280 illustrations I should estimate conservatively as necessary for the New York book 28,000 illustrations, providing, of course, that the New York volume is done as thoroughly as that on the comparatively small city of Charleston. However, the idea is excellent, and we wish it unqualified success. Volume I is purely an architectural reference work of great merit. It contains a short but concise resume, of about 10 or 12 pages, on the history, commerce and agriculture of the community, together with a sketch of the little that is known of Charleston's early architects and an outline of the architectural characteristics of the various periods. The remainder of the work, some 214 pages, is devoted to reproductions from photographs of exteriors and interiors of public, ecclesiastical and domestic buildings from the earliest extant examples to those built about the middle of the nineteenth century. The work is profusely interspersed with measured drawings and details. It is beautifully set up, the illustrations are clear and distinct, and the presswork is good.

The great value of the book lies in the many illustrations of the quaint and charming little structures on the side streets and out of the way corners, heretofore not considered important enough to be reproduced, but which give to the architect a wealth of new material. Among these smaller buildings are shown many examples of the interesting corbeled and dentiled brick cornices which are seen everywhere in Old Charleston, but which are rarely reproduced. There can be seen on many of these quaint buildings red tiled roofs, a rather startling revelation. There are included slave quarters, coach houses, stables and gate lodges as well as the gates and gate piers in which Charleston abounds. The book contains a great wealth of exceptionally fine interiors and interior details. Many of the beautifully wainscoted rooms equal those of the mother country. The details include splendid doorways, chimneypieces and graceful stairways. Many of these interiors and details have been measured and drawn and offer splendid material for architectural study by designers of interiors.

Charleston is noted for its ironwork and balconies, and these features have not been overlooked during the compilation of this book. There are numerous examples of simple or rich iron gates and balconies, and the balconies are particularly interesting. The foreword says that "a clue to the character of Charleston and her peo-

An Authoritative Work on

"THE GREEK REVIVAL"

By HOWARD MAJOR



THE search for effective types of architecture for domestic use leads logically to the re-discovery of the style known as the "Greek Revival." In the hands of a few particularly skillful architects it is being used with marked success, their use being based largely upon study of such examples as have survived the period, just prior to the Civil War, when use of the type was widespread throughout the United States. It is an entirely American style, founded not upon a following of current English architecture but upon a study by Americans of classic types adapted to domestic uses.

Mr. Major's excellent work is the result of a careful study of the style as it was interpreted in the North and East, and particularly in the South. The illustrations of exteriors and interiors are full of suggestions for anyone seeking a variety of architecture bold, simple and effective, which supplies a fitting background for life in America. The book is richly illustrated, and shows existing work, large as well as small, in both city and country.

236 Pages; 7½ x 10¾ inches. Price $15

ROGERS & MANSON COMPANY
383 MADISON AVENUE, NEW YORK

ple is to remember that during their period of growth and greatest importance they were essentially of the eighteenth century." The illustrations abound in work of the eighteenth century style of the Adam brothers, and much of it is so good that it might have been done by Robert Adam himself. An interesting feature of the volume is its series of maps dating from 1739 to 1849, showing the development of the city in its various stages. It is unusual to find mill buildings included in a work of this character, but the editors justify themselves as may be gleaned from their text. "They (the mills) show that in this period the designing of commercial structures was given as much consideration as that of public buildings or dwellings. Essentially factories, their proportions, the proper relationships of voids and solids, and the light and shade effects of surfaces were all carefully studied and conformed admirably to the architecture of the city." Plans of many of the houses are reproduced along with exteriors and interiors.

THE OCTAGON LIBRARY OF EARLY AMERICAN ARCHITECTURE, Volume I, Charleston, S. C. Edited by Albert Simons and Samuel Lapham, Jr. 9¾ x 12¾ ins. Price $20. Press of the American Institute of Architects, Inc., New York.

HOUSE & GARDEN'S SECOND BOOK OF GARDENS. 233 pp., 9¾ x 12¾ ins. Price $5. The Conde Nast Publications, New York.

IN considering the now almost universal interest in gardens and gardening it might be difficult to decide whether it is the result of interest in country living or whether country living is the result of interest in gardening and gardens. It seems likely that each has had its effect on the other, aided powerfully by the motor, which by bringing vast reaches of real country into close touch with the town has made country living possible. The growth of interest in garden making might be measured or gauged to some extent by the skill or proficiency with which such gardening is done, and this constantly developing skill might be evaluated by examination of the publications of one kind or another which cater to garden makers and their varied interests.

Here, for example, is *"House & Garden's* Second Book of Gardens," made up of matter much of which has probably already seen the light of print in various issues of a monthly magazine, but here collected, collated, and amplified with new matter calculated to appeal strongly to garden makers. A considerable portion of the volume is devoted to illustrations of gardens large, small and of medium sizes, illustrations likely to arouse or increase enthusiasm. Then there follow consideration of various kinds of gardens,—rose gardens, rock gardens, wild gardens, and water gardens,—much matter relating to the culture of trees, shrubbery and bulbs, and finally a calendar for the 12 months of the year, a list of names and addresses of landscape architects and schools of landscape architecture, and a bibliography dealing with the subject. Architects could hardly fail to note from the illustrations in this volume the constantly increasing skill with which architecture and gardening are being brought into closer and more sympathetic relations. Architecture depends, in fact, upon the coöperation of gardening, just as it depends upon the aid of painting and sculpture, and the best interests of all are served when each contributes its part to the triumphs of the art which is the mother of them all, to which all owe tribute.



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GRADE SCHOOL BUILDINGS; BOOK II

IN no department of architecture have the last ten years seen quite the progress which has been made with schoolhouses, a class of buildings of the first importance, since they exert a strong influence upon their communities, and by their architectural excellence or the lack of excellence they elevate or lower the architectural standards of entire districts. Study of school structures, particularly at the hands of a group of well known architects, has resulted in their being given a high degree of architectural distinction and dignity in the way of design, while study directed toward their planning and equipment has led to their being practical and convenient far beyond what was regarded as an advanced standard of efficiency even a few years ago.



Kensington Schoolhouse, Great Neck, N. Y.
Wesley Sherwood Bessell, *Architect*

THIS volume, a companion to another published in 1914, records the results of endless study and experiment in different parts of the country, summed up and presented. By illustrations of exteriors and interiors, by floor plans and carefully written descriptions and articles by well known architects and educators the present high standard of schoolhouse design is made plain, and these results which have been achieved by a few architects and school boards are thus made possible to all architects who are interested in schoolhouse design. The compiler has selected from almost 1000 exteriors and floor plans the school buildings to be illustrated, and the volume records "a process of innovation and elimination, namely, the introduction from time to time of features which have been deemed desirable and practical, and the elimination of things which, owing to changed school methods, are no longer required."

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THE PRACTICAL BOOK OF LEARNING DECORATION AND FURNITURE. By Edward Stratton Holloway. 176 pp., 6½ x 8¾ ins. Price $4.50. J. B. Lippincott Company Philadelphia.

AN observer of the progress being made by architecture in America may well be puzzled by the almost complete separation which seems to prevail between architecture proper and interior decoration and furnishing, which are closely related thereto. While a few well known architects control the furnishing and decoration of the structures,—usually residences,—which they build, and while a few others work more or less closely in collaboration with interior decorators, there remains the fact that the great majority of American architects lose touch with even their best creations when they are turned over to their owners, their final appearance, with all that it involves, to be made or marred by the taste and skill,—or the lack of these qualities,—possessed by the owners or their decorators. One may well ask if architects really understand and appreciate the importance of decoration and furnishing, and it would seem that few indeed do, though they may well remember the great care which he gave to details of furniture, and the critical taste with which even the great Adam designed such minor accessories as the shovels and tongs for fireplaces and the patterns for damasks, details comparatively trivial.

This excellent work has been prepared, possibly, with a view to its use by precisely the class of readers who would seem to be most in need of its teachings. That it is in no wise an elementary text book or primer, written for the use of that large number of people who are vaguely interested in decoration and wish to acquire a smattering of information regarding it, is quite evident, since it presupposes,—and quite properly,—some knowledge of the decorative styles and the historic periods which witnessed their rise and development. Mr. Holloway considers the entire subject under four headings: Renaissance, Baroque, Rococo, and Neo-Classic, and under each of these heads he discusses its developments.

THE TREATMENT OF INTERIORS. By Eugene Clute. 200 pp., 8½ x 11¾ ins. Price $6. The Pencil Points Press, New York.

THAT the field of modern interior decoration is indeed broad is abundantly proved when one examines a work which deals therewith. In this volume, by a former editor of *Pencil Points*, there is given a glimpse of what is being done and what has been done during recent years, the work containing illustrations of domestic interiors of various kinds, from the simplest and most austere, such as were favored by the colonists around Massachusetts Bay in the early part of the seventeenth century to the most elaborate and ornate,—English, French, Italian or Spanish,—such as are being affected by the very rich in and about New York almost exactly three centuries later. It is hardly probable that Americans can ever be prevailed upon to give more than a polite and casual interest to the vagaries of modern European decorative art; the utter impossibility of arousing enthusiasm was demonstrated a year or two ago when quite an exhibition of it was given in New York, and the very mild interest then stimulated is not likely to be encouraged by the illustrations of recent achievements which are given in this volume. The text of the work, dealing with the various phases of interior decoration, is valuable and interesting and more important.

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SKETCHES OF NORTHERN SPANISH ARCHITECTURE. By Samuel Chamberlain. Text and 51 Plates, 9 x 12 ins. Price $10. Architectural Book Publishing Co., New York.

AS travelers and writers are continually pointing out, Spain is at present the only country in Europe,—and possibly in the entire world,—which is still really "mediæval." Even in Japan and China the milestones of progress are plainly manifest in the form of steel-framed buildings and tall factory chimneys emitting clouds of black smoke,—but Spain slumbers on, stirring sometimes with a tremor of revolution, but always falling back into that sleep which followed her retirement from world affairs as one of the most powerful countries of Europe.

In looking through this enchanting portfolio, one scarcely knows whether to admire more the few pages of graphic text with which Mr. Chamberlain prefaces his sketches or the drawings themselves. The text makes record of the charm, romance and mystery of Spain as they impressed an American traveler in search of that old-world beauty which Spain offers in such variety and abundance, and yet the sketches themselves record in a way not to be misunderstood the actual, tangible realities which the text describes. Mr. Chamberlain possesses the two gifts most necessary for an artist,—an almost unerring discrimination in choosing subjects for his sketches, and an equally discerning taste in composition and use of technique. These gifts have been made the most of in traveling through a country so abounding in subject matter as northern Spain, where, perhaps, composition almost suggests and disposes itself, tempting the traveler to transfer to paper the pictures into which the details group themselves. It is indeed the sketcher's delight.

For an architect the value of Mr. Chamberlain's sketches is great indeed, and the drawings abound in practical suggestions. Spanish architecture and decoration derive much of their mystery and charm from the very abruptness of contrast which they present,—the richness of carved ornament, perhaps, with surrounding walls of austere plainness to act as a foil, or lavish use of color used possibly within the reveals or for the voussoirs of arches in walls which are themselves severely simple. This element of striking and dramatic contrast, so valuable in architecture and decoration, has of course been made the most of in sketches as subtle as those of Mr. Chamberlain. The drawings are never overelaborated or so full of minute and intricate detail as to be almost photographic, nor are they so sparse and thin as to convey merely a suggestion of what is portrayed. Mr. Chamberlain understands, even without the use of color, just what to dwell upon in a drawing, this suggested if not portrayed by deft and telling strokes or lines of pen or pencil,—giving neither more nor less than the shading which throws into sharp relief the desired details.

The present interest of architects is directed largely toward types which have been developed in Spain, and Spain, upon the other hand, offers in profusion just the suggestions which give Spanish architectural character to a building which may be simple to the point of severity or elaborate to the last degree; the variety of these drawings is calculated to increase considerably this interest.

The Practical Book of Tapestry

By George Leland Hunter



THE intimate connection between tapestry and architecture as well as the frequent use of architectural motifs in tapestry design gives to tapestry and its history an interest to architects which is strong. Primarily associated with the Gothic age, which saw what were perhaps the most brilliant of its triumphs, tapestry has been identified with the development of all of western Europe and with the different periods—the Renaissance, early and late; the Baroque age; the eras of the different Louis; and in later days with the various places where looms have been set up and where present-day workers are engaged in creating by use of old-time methods those marvelous weaves which add to any surroundings where they are placed a richness of decoration which confers dignity and splendor to the place where they are used. No study is more absorbing than that of tapestry.

IN this volume is given a complete review of the subject of tapestry. The author has made a deep study of tapestry's history and is familiar with every important example in the world. The volume deals also with the technique of tapestry weaving, the changes and development of its design in different countries at different times, and it goes at length into descriptions of modern looms where this ancient art has been successfully revived. The illustrations, many in full color, add to the reader's interest. All are from photographs made especially for this work, and many show the student for the first time examples of tapestry weaving of the first importance. The volume is particularly valuable by reason of its accurate documentation and full bibliography and because of its giving the names of places where there are to be seen the most important tapestries now in existence.

Richly illustrated in half-tone and full color. 302 pages; 6½ x 8¾ inches. Price $10.

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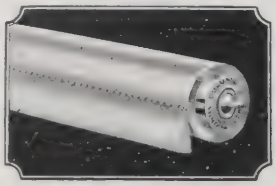
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The ARCHITECTURAL FORUM

VOLUME XLVI — *Established 1892* — NUMBER 6

CONTENTS *for* JUNE 1927

Public Buildings Reference Number, Part I

PLATE ILLUSTRATIONS	Architect	Plate
Rhode Island Capitol, Providence	*McKim, Mead & White*	97
Missouri Capitol, Jefferson City	*Egerton Swartwout*	98-100
Minnesota Capitol, St. Paul	*Cass Gilbert*	101
Nebraska Capitol, Lincoln	*Bertram Grosvenor Goodhue Associates*	102
Insular Capitol, Manila	*Ralph Harrington Doane*	103
Porto Rico Capitol, San Juan	*Carmaega & Nichols*	104
New York County Court House	*Guy Lowell*	105
Catawba County Court House, Newton, N. C.	*Willard Rogers*	106
Hamilton County Court House, Cincinnati	*Rankin, Kellogg & Crane*	107
Court House, Memphis	*Jones & Furbringer*	108
Essex County Court House, Newark	*Cass Gilbert*	109
Hardin County Court House, Kenton, O.	*Richards, McCarty & Bulford*	110
Ouachita Parish Court House, Monroe, La.	*J. W. Smith, H. H. Land, and D. Curtis Smith*	111
Mesa County Court House, Grand Junction, Colo.	*Eugene G. Groves*	112
Town Hall, Lebanon, N. H.	*Jens Fredrick Larson*	113
Municipal Building, Teaneck, N. J.	*Ludlow & Peabody*	114
Town Hall, Milford, Conn.	*Egerton Swartwout*	115
City Hall, Yuma, Ariz.	*Lyman & Place*	116
Town Hall, Littleton, Colo.	*J. B. Benedict*	117
Municipal Building, White Plains, N. Y.	*Joseph H. Freedlander*	118
City Hall, Plattsburg, N. Y.	*John Russell Pope*	119
Fire House and Town Hall, Larchmont, N. Y.	*Frank Moore*	120
Vermilyea Avenue Fire House, New York	*Dennison & Hirons*	121
Byberry Fire House, Philadelphia	*Rankin, Kellogg & Crane*	122
Fire Station, Arlington, Mass.		123
Fire House, Mariemont, O.	*Charles F. Cellarius*	124
Fire Station and Police Headquarters, Milburn, N. J.	*Horatio W. Olcott*	125
Fire House, Salem, Mass.	*Kilham, Hopkins & Greeley, and P. H. Smith*	126
Town Hall and Fire Station, Swedesboro, N. J.	*Simon & Bassett*	127
Fire House and Auditorium, Larchmont, N. Y.	*Charles F. Mink and Otto R. Eggers*	128

LETTERPRESS	Author	Page
Cover Design: New York City Hall	*From a Sketch by Francis Keally*	
The Editor's Forum		71
West Virginia Capitol, Charleston	*Cass Gilbert, Architect* *From a Drawing by Hugh Ferriss*	Frontispiece
Designing Capitol Buildings	*Joseph H. Freedlander*	505
Essex County Hall of Records, Newark	*Guilbert & Betelle, Architects*	509
Designing and Planning Court Houses	*A. Ten Eyck Brown*	513
Capitol of Philippine Islands, Manila	*Charles G. Loring* *Ralph Harrington Doane, Architect*	537
Police Department Headquarters, Boston	*Ritchie, Parsons & Taylor, Architects*	539
City and Town Halls	*Charles G. Loring*	561
Fire House and Auditorium, Larchmont, N. Y.	*Charles F. Mink, Architect, Otto R. Eggers, Associated*	585
On the Designing of Fire Houses		586
Fire Alarm Headquarters, Boston	*O'Connell & Shaw, Architects*	609
Heating and Ventilating Public Buildings	*Alfred J. Offner*	613

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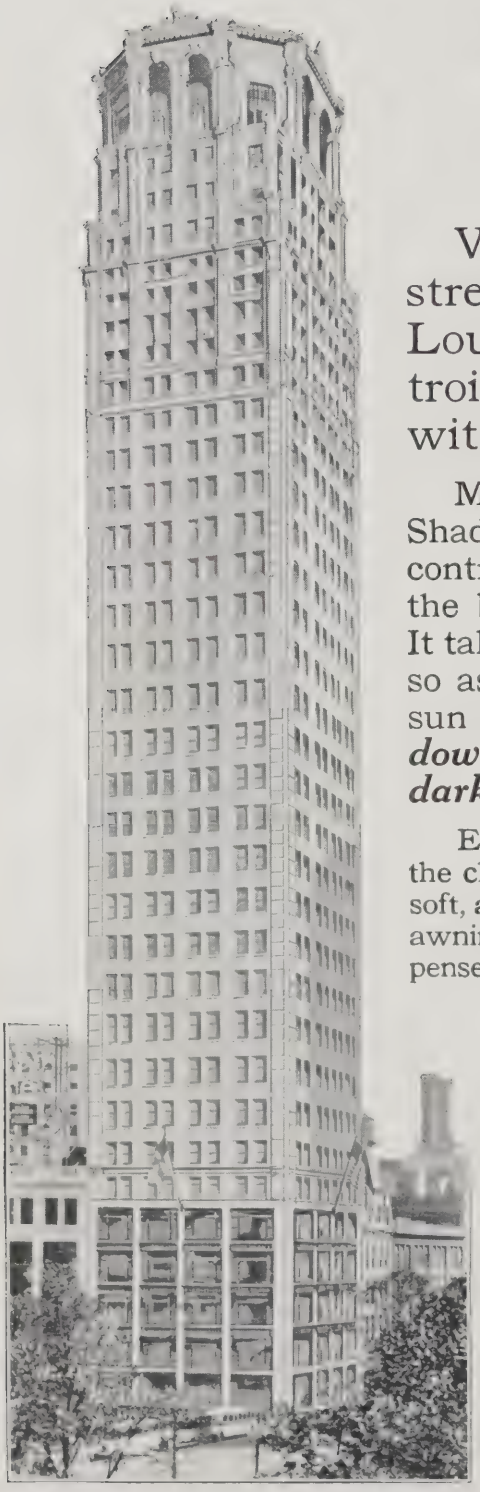
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THE EDITOR'S FORUM

SUMMER COURSES IN EUROPE

NEW YORK UNIVERSITY, Department of Fine Arts, announces courses for architects and decorators to be given in Paris, London and Munich during July and August, 1927. Summer courses in London (Victoria and Albert Museum): English architecture, sculpture, and decorative art, mediæval to modern; English furniture, arts and crafts in London museums and collections; English interior design, old London (sketching course); classroom and field lectures; week-end visits to Canterbury, Oxford, Cambridge, Winchester, Windsor, Exeter or Salisbury Cathedral. Transportation by sea and land, subsistence, lodging, six week-end trips and tuition, $500. Absent from New York for the two-month period from June 29 to August 29.

Summer courses in Munich (University and Museums): German architecture, mediæval to modern; modern German applied art; German handicrafts; old and new masterpieces of decorative art (field lectures). Week-end visits to Regensburg, Augsburg, Landeshut, Fuessen, Ulm, the Rhine, and tuition (option of return via Paris), $500. Absent from New York, July 2 to September 15. Summer courses in Paris (Musee du Louvre): French architecture, decorative art and furniture, from Gothic to modern; French interior design; architecture of Paris; architectural design and theory of composition. Classroom and field lectures, week-end visits to Versailles, Amiens, Fontainebleau, Chartres, Chantilly, Reims, Rouen, and the chateaux of the Loire, transportation by sea and land, subsistence, lodging, six week-end trips and tuition, $450. Absent from New York June 25 to September 1. Other courses are offered in history, painting, sculpture, allied arts, and music. Those interested will please write to the Department of Fine Arts, New York University, Washington Square East, New York.

A FELLOWSHIP FOR RESEARCH

THE Committee on Colonial and National Art of the Archæological Institute of America is prepared to assign a grant or fellowship of $1,000 for the year 1927-28, for research in the history of art in the original area of the United States either during the colonial period or the early period of the republic. The field of research may lie in architecture, painting, sculpture, or the crafts. This grant will be open to persons of unusual attainments in advanced study, as shown by the previous publication of contributions to knowledge of high merit, or by exceptional aptitude for research, who shall submit plans for their proposed study. It is the intention of the Committee to finance some work of permanent value which could not otherwise be accomplished. Accordingly, applications will be entertained from established scholars, as well as from younger applicants. In any case candidates will be expected to have capacity for independent research, as distinct from supervised research ordinarily done toward the degree of Doctor of Philosophy. Projects which have already been begun, and in which the prospects of success can thus be more readily appraised, will be gladly entertained by the Committee.

As it is the expectation that those applying will have completed their formal academic training and be of responsible maturity, there is no requirement of residence in any seat of learning, neither is it requisite that an entire academic year be devoted exclusively to this study. On the other hand, the candidate would be expected to give his whole time to the work during the proposed period of study, which should be adequate to accomplish the object desired. Applications giving particulars of the candidate's age, education, published work, and proposed plan of research should be sent to the Chairman, Memorial Hall, Fairmount Park, Philadelphia.

TO STUDY BUILDING CRAFTS

EXPEDITIONS by the drafting staffs in the offices of New York architects to the shops and studios of workers in the arts and crafts involved in the production of buildings will be made under the direction of the New York Chapter of the American Institute of Architects. The aim is to establish closer relations between draftsmen and the craftsmen of the building trades, according to a report of the Chapter's Committee on Education, made public recently. Better buildings, it is believed, will result from schooling the draftsmen in problems of craftsmen.

A COMPETITION IN TEXAS

MANY Texas towns will be visited this spring by artists from all parts of the country seeking subjects for the paintings which they will enter in a great competition for $14,500 in cash prizes.

For the best paintings in oils based on the theme of Texas wild flowers, open to competition by all artists of all nationalities and places of residence: first prize, $2,500; second, $2,000; third, $1,500; fourth, $1,000. For the best paintings in oils based on the theme of Texas wild flowers, open to competition only by artists resident in Texas: first prize, $1,000; second prize, $500. For the best paintings in oils depicting Texas cotton fields, open to competition by all: first prize, $1,500; second, $1,000.

Further details, entry blanks and the rules of the contest can be had by writing to the San Antonio Art League, Witte Memorial Museum, San Antonio.



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The 1927 Convention, American Institute of Architects

THE Sixtieth Convention of the American Institute of Architects, which was held in Washington during the second week of May, was noted for the high quality of the many addresses delivered and the progressive spirit shown in the reports and findings of the Board of Directors and its several sub-committees. Following the precedent of former years, the opening session of the convention was devoted to the address of the President and to the presentation of the principal subject of discussion taken up by the convention.

The subject this year was "The Relation of Architecture to the Allied Arts." In this discussion the address on Architecture was delivered by the Chairman of the Committee on Allied Arts, C. Grant LaFarge of New York, followed by an address on "Landscape Architecture" by Arthur A. Shurtleff of Boston. The discussion of the Relation of Mural Painting to Architecture was conducted by Arthur Sinclair Covey of New York, the President of the Society of Mural Painters. John Gregory, the New York sculptor, spoke upon the Importance of Sculptured Decoration in Architecture. Lorentz Kleiser of New York gave expression to the importance of Craftsmanship in Architecture. These several addresses adequately expressed the need of appreciative coöperation between Architecture and the Allied Arts. At the first evening session of the convention a resolution was suggested that prominent and honored representatives of the Allied Arts and Crafts should be admitted to membership in the Institute. This resolution, however, met with but scant support and was referred to the Committee on Allied Arts without being acted upon.

The second and third days of the convention were devoted to the presentation of the reports of the many committees of the Board of Directors. Unfortunately, space does not permit the inclusion of the highly interesting reports of the Committee on Allied Arts, that on Architectural Decoration, the Small House Service Bureau, the Committee on Community Planning, the Committee on the Code of Ethics, Committee on Public Information, the Committees on Public Works and Plan of the City of Washington and many other committees. Copies of these reports in full may be procured from the Washington office of the American Institute of Architects. The closing of the convention was marked by the annual banquet, held in the auditorium of the Chamber of Commerce, where all of the convention meetings were held. Following the banquet these awards were made: Frank Holmes received the Craftsmanship Medal. To Lee Lawrie, famous for the sculpture and architectural decorations on the Nebraska Capitol and much other of the late Bertram G. Goodhue's inspired work, the Fine Arts Medal was presented. The significant and touching event of this important gathering was the presentation of the Howard Van Doren Shaw Gold Medal to his widow. The ceremony of presenting these three awards was followed by an address by Charles Moore, Chairman of the Commission of Fine Arts, on the subject of "Architecture and the Allied Arts." Thus the opening and the closing of one of the most successful conventions ever held by the American Institute of Architects were marked by notable discussions of the all-important subject, "The Relation of Architecture to the Allied Arts." The convention of 1927, in fact, will long be happily remembered.

No better exposition of the aims and ideals of the American Institute of Architects can be found than the thoughts of Milton B. Medary, President of the Institute, as expressed in his opening address, which together with C. Grant LaFarge's interpretation of the Relation between Architecture and the Allied Arts are quoted in part upon this and following pages.

President Medary's Address

THE American Institute of Architects, through the devoted service of its members over many years, has contributed to the machinery of practice, to the knowledge of materials and methods of construction, not only documentary forms but a fund of information invaluable to the profession, without which the inexperienced architect at the threshold of his career must meet many discouraging obstacles before finding himself free to devote his talents to the realization of his creative impulse in physical form.

The freedom with which his imagination may realize the noblest dreams of his spirit, within the limits set by material facts and forces, is greatly increased by this work of Institute committees which puts into his hands the slowly accumulated experience of his forerunners.

The heights to which the art of architecture may reach, freed from these concerns of its machinery, are limited only by the heights built under our feet, and as we build, greater heights are made possible of attainment.

In every phase of life we have below us the product of the toil and the aspirations of those who have gone before us—ours to use and to extend to the limits which their work has brought within our reach. In our own art, the scientific research work in the field of materials and methods and in the preparation of orderly procedures of practice has given the architect tools tried and ready for his use. To these tools our future architecture must owe great obligation; the artists who use them, yield grateful acknowledgement.

In another aspect, the American Institute of Architects has served the art of architecture well in preparing the ground for a nobler future growing out of a more understanding and sympathetic soil, for no great art so intimately expressing the humanities of any social system can long remain exotic. It must be woven out of the whole of life and be present to some degree in its every expression.

The American Institute of Architects has sensed and accepted this obligation and, through its publications and lectures and the proper use of publicity, has worked faithfully and diligently for a broader understanding of architecture as the physical language of human activities, and of the immense significance of all the arts in their power to make material necessities beautiful, and further, to destroy forever the fallacy that a gulf exists between the material and the beautiful. It is the artist's privilege and obligation to challenge this latter doctrine. It is ours to make all material things beautiful, and their use an ennobling and joyous experience. For this, I believe the American Institute of Architects has undertaken to pave the way.

With the work which has been done so far and which must be vigorously prosecuted, it has seemed the time was ripe to build our art upon the ground prepared and with the tools gathered for our use, and it has been thought well to

devote as much of the time of this convention as may be to a consideration of the elements of an art which have made it a living index to the social and religious institutions of nations and peoples since Abraham lived in the city of Ur.

Sincere civilization has always sought to express the life within itself and has never been satisfied with the expression of other lives, no matter how noble or how beautifully expressed, knowing instinctively that the form is but a shell except for the spirit of its creator contained within it.

Science is by its nature preoccupied with things which may be seen, or touched, or weighed, or measured—all else must be discarded as "unreal"—and by its searchings for facts and reasons it is the invaluable handmaiden of creative art; but every conscious living creature knows that it is only the vital part of himself, the part that cannot be seen, or weighed, or measured, that he wishes to express—the intangible, the universal, the eternal, that part of himself which is not material, which science has never reached, and which only in exalted moments seems within his own reach.

In the myriad confusions and complications of twentieth century life, men are bewildered by the surface manifestations of constantly changing forms pressing upon them and stretching as far as the vision may reach, and in this confusion is the promise of the awakening of a new springtime of art. In literature, in religion, in sculpture and painting, in music and the drama, as well as in architecture, the world is in revolt. We refuse to repeat the expression of other lives and demand the opportunity to add our own expression to the sum of truth and beauty built up through the ages. But, as in all revolts, we are passing through the extreme forms of complete repudiation with all its crude accompaniments, called for want of a better word, by the name of "jazz."

The architect hears everywhere: Let us have a new architecture, an American architecture; let us have done with the dealers in classic and mediæval forms; let us try something truly American! . . . This is plain sophistry. Just as well say: Let us have an entirely new written language, as well as the physical one; let us stop using the words used by Shakespeare and express our thoughts by sounds never heard before; and let us be entirely individual and no two of us use the same sounds! . . . This sophistry is due to the confusion which fails to differentiate between using the soul and mind of Shakespeare as our own and using the words with which he expressed the thing born in his own spirit; words which have become exquisite with every delicate shade of meaning only because men have long used them and understood them. Without them the power of beautiful expression would disappear. The written language is a living, changing thing, however, and slowly and surely, as Doric architecture became Ionic, and Roman Romanesque, and Romanesque Gothic, the English of Chaucer became that of the sixteenth century, of the eighteenth century, and of the present day.

Let us, then, in looking to the future, close our eyes to the changing multitude of surface manifestations and look below the surface for the roots out of which they spring, and let us search among the roots for those which are universal and have abiding character. On these let us build in our own way, with the freest fancy, expressing our own spirits. We need not copy last year's blossomings, but we may and should take what made these blossomings beautiful as our inspiration. Our work will then surely be ours and cannot be confused with carefully reproduced expressions of great souls long since dead. This latter is the plagiarism which proclaims its author's belief that architecture is no longer a living thing.

May I speak of the fallacy of an American architecture as a new national art, distinct and altogether different from other national architecture and from our own forms of the past? Every nation as long as we shall have nations, and particularly every clime, whether coinciding with national boundaries or not, will of necessity develop identifying characteristics in any truthful architecture; but the nineteenth century with its revolutionary contributions to communication between the peoples of the earth put behind us forever the isolation of national thought and expression in self-contained units, the influence of each unit limited to a slow advance along the commercial routes of Europe and Asia or transplanted violently as part of the spoils of war. To the rich inheritance of all past time, representing the most exalted expression attained by the noblest spirits of China, India, Persia, Egypt, Greece, Rome and mediæval Europe, are added streams of inspiration pouring in upon us from contemporary art throughout the world. The so-called "modern" movement in central Europe and the Scandinavian countries is as well known to American architects as to Europeans, and its outstanding examples are published and analyzed in the architectural press of America as freely as the work of our own architects. Most probably the new town hall at Stockholm has been given as careful study by American architects as any of the outstanding contemporary works in our own country. And I believe that architects throughout Europe keep as closely in touch with the work done here.

All of which points clearly to the fact that the architecture of the future will be influenced as directly by great work in any part of the world as the architecture of Greece was influenced by the works of neighboring cities or as each cathedral built in western Europe was influenced by those which immediately preceded it.

With the timely passing of period art and its forgeries of other men's minds and souls as well as the idiosyncrasies of their manual craft and skill, the architectural future has a field cleared of the blighting influence of the sophistries which have beset it on every hand, whenever we are ready to declare that we have done with them. We should not fear to build our own interpretation of today, as God gives us the inspiration and power to know and feel and see it in its most beautiful aspect, upon the great foundation made up of the aspirations and the sweat and blood of the past.

Our obligation is to contribute to the utmost that is in us to the great architecture of the world and to help those who follow us to contribute more on the structure we have thus developed. It is here that we feel the need of understanding clearly the nature of our opportunity and its challenge. We have chosen architecture as a medium by which each of us shall give his personality to the evolution of life. If we are to insure as great a contribution as comes from those who have chosen other media for their life expression, we must seek the fullest expression of our art.

What, then, is architecture in its fullest manifestation and what are the elements which must be present?

In schools and among professional artists, architecture is usually listed as one in a catalog of the arts. The crafts, for some indefensible reason, are classed separately, but certainly they are the very essence of art as applied to material things. Architecture has been called the "mother" of the arts, and this expression reveals recognition of a necessary relation of all the arts and their interdependence—in short, a family of the arts. I have come to the firm conviction that architecture can have no existence apart from the elements of which it is composed; that no architecture can be created or ever has been created which is not an assemblage of the arts; and that no truly great architecture ever was or can be except it be a complete fusion of all the arts into a perfect harmony, each dependent upon the others, the whole inspired at its conception by the appropriate beauty each holds ready for the enrichment of every other and of the whole. This is more than coöperation; it is the stimulation and cross-fertilization of all by the collective presence of a full orchestra of creative impulse. Who can read of the gatherings of artists in the gardens of the great art patrons of the Renaissance, or that earlier description of the building of Solomon's Temple, where the workers in stone and wood and iron, in gold and ivory and precious stones, were called to give their best to a glorious fabric, without feeling the influence these contacts must have had upon the whole? The objects taken from an ancient Egyptian tomb might have been the work of the cathedral builders of the thirteenth century, for both proclaim the presence of all the arts at their conception.

Here, then, lies the trail over which we must travel, hand in hand, a happy company of the arts, each enriching the others with a power and vision none could hope to achieve alone.

This convention has been planned to make such a theme its major motif; to inaugurate understanding coöperation of all those whose lives are dedicated to the service of the several arts, both in the schools and in the actual building of the fabric of the world; to help us to know each other better, that each of us shall be enriched by that knowledge, that in creating the material we may help each other to express the spiritual, that sculpture may once more be thought of as part of a parthenon without losing its dignity as sculpture; that painting may become again a vital part of

walls and ceilings and altar-pieces; that the names of artists will recall their part in collective compositions as do the names of della Robbia, Giotto and LeNotre. Upon this theme there have already been founded the American Academy in Rome, the American Federation of Arts, and the Architectural League of New York. Upon it our Committee on Education, backed by the Carnegie Foundation, has launched its program for a wider understanding of the significance of the arts, and upon it I hope the American Institute of Architects will build a program for the future in which all the elements of architecture shall be represented in all our contacts with the schools and the public as well as within our own profession, the profession of architecture.

Address by C. Grant LaFarge

THE complete report of the Committee on Allied Arts will, in due course, be presented to this convention in printed form. The recommendations therein advanced, their desirability, their practicability, will, we assume, be discussed, and the convention will declare its attitude toward a program which, if adopted, undoubtedly would commit the Institute to a continuing policy of long duration and which could be effective only if wholeheartedly supported.

For the moment let us consider the major principle which this committee was directed to express. The President of the Institute has said it many times; we state it again: That we shall now turn our attention to architecture as an art, having long debated it as a science, a profession. That we shall view it as an art in which all the arts of design are so interwoven, so interdependent, so essential, that unless their intimate relationship shall be clearly recognized and brought to fullness of realization, American architecture will not express the entire potentiality of American genius. Hence, that we must foster collaboration in the arts of design, the arts that in their sum compose what we call architecture. This being our goal, how shall we set out to reach it? There are two paths to follow, inform ourselves upon what our resources are, then open our minds and our hearts to the use of them; minds and hearts being opened, let our resolution be closed.

Our resources are so vast and so numerous, that even the mere glance at them is bewildering,—an ever-growing number of landscape architects, trained as but lately was undreamed of; mural painters, sculptors, whose performance is already notable, whose promise outstrips our present vision; an uncounted host of craftsmen, equipping us, the country over, with accessories to our buildings that more than once we shall find may bear comparison with works of the periods we like to copy; last, but not least in importance, schools—but on education we shall touch later on.

One of the proposals that we make is the widespread collecting of data covering the executed work of these various producers; its systematic recording in such wise that it may be constantly and promptly available to all our members. Under this plan the record would show to all the experience of others:—cost, absolute and relative to entire cost of building, some idea of the circumstances under which the work was done; how much there was of unison between the architect and his fellow artists;—in short, of collaboration, such as Benjamin W. Morris has inspiringly related concerning his Cunard Building and Seamen's Bank; also how much of his own design the craftsman contributed, as so often is the case. These would be some of the data. We believe they would be valuable as a dependable basis for estimating some percentage of total cost to be allowed beforehand for providing proper adornment of certain buildings, a proposal that has been before the Institute, but which we do not yet really know enough about to determine intelligently. We believe further that they would be profoundly helpful to many of our brethren who practice in other than the crowded metropolitan centers.

We speak of collaboration. What do we mean by that term? Perhaps, to clear our minds, we should first say what we mean by architecture. Surely no clever catch phrase will suffice, however poetic. It is all very well to say that architecture is frozen music, but it leads us nowhere, for our function is to conduct the orchestra. So we want to play our music, composing it at the same time, with no instrument so humble that its little note shall not be right in the completed symphony. If after that it freezes, very well. But we know architectural compositions which, because of faulty collaboration—may the gods forgive the mixed metaphor—do not jell! Pray don't tell us it was a case of too many cooks!

If we observe a beautiful building, wisely placed in a beautiful setting, complete in all its details and appointments, ready to serve its human purpose, who among us would dare have the hardihood to draw the rigid boundary line demarking its architecture, separating that art from its sisters? None, let us trust, among the enlightened body now being addressed. They know, none better, whence flows the quality that radiates from the monuments of a day long gone, that stirs us to our finger tips and excites our baffled envy. They do not imagine that some harried ambitious architect, after anxiously reviewing his photographs, has said to the august building committee: "Gentlemen, in view of all the circumstances, I think it had better be Romanesque"—or Gothic, or Byzantine, or Renaissance, or what you like. Or even that he has said: "For God's sake, let's be modern and show 'em!" They do not think that he made in his elaborate office all the details of every feature of the building and then ordered a modeler to follow his drawings in clay, cast the models in plaster so that a stone carver or a wood carver should cut from them, and so perpetuate the mud. They know that he did not summon a sculptor and say: "Here are the places for some statues. Make them, and make them to fit." Or a painter, and go through an equivalent formula. And so on, through the list. No; they know better. Then why should we adhere to an attitude of assuming these sad, mad, bad ways to be good? In extenuation, be it said, that we are inheritors. Men now living can recall the time when knowledge burst upon our predecessors. They remember an arid period, when the crafts were at a forlorn ebb, the allied arts lost among the easels, or the deplorable public park embellishments, and architectural design just emerging from Cimmerian gloom. But those times have changed, changed out of all recognition, and if we persist in behaving as though we still were in them, we deliberately close our eyes to the light.

Suppose, then, that we shift our point of view and contemplate another method of approach. As we take our stance it will surely not be amiss to ponder the words of an architect whose untimely death lost to us not merely one whom we loved, but one who quite surely had his feet upon the threshold of a glorious future. For Bertram Goodhue, great as was the contribution that his eager spirit made, was beyond a doubt opening the doors of wonder. And Goodhue said, "I should like to be merely one of three people to produce a building,—i. e., architect, painter, sculptor. You see what I mean. I should like to do the plan and massing of the building; then I should like to turn the ornament (whether sculpture or not makes no difference) over to a perfectly qualified sculptor, and the color and the surface direction (mural paintings or not as the case may be) to an equally qualified painter." These are the words of a man of genius, a man who in his own person embodied more, far more, of ability in the allied arts than most of us possess. Indeed, out of that ability, out of that knowledge sprang the modesty, the respect, that his wish reveals.

We are about to design a building, no matter just what kind, to stand in extensive grounds. We have, let us say, a pretty fair idea of the type we shall adopt. Forthwith, we shall summon the landscape architect into conference, for we are satisfied that his advice upon placing is valuable, and that according to position, our plan and our mass may be affected. We further know that his method of approach is different from ours; he works from the outside in, we from the inside outward. That is, his design must lead to our building, and our building will look out upon his design. These two functions must not be divorced; they must be united. We know something else—that just as our task is highly technical and requiring skill, so is his. Our common sense tells us to obey the familiar injunction to "keep off the grass." That grass, for us, is paper stretched upon a drawing board, to be covered with some sort of a plan that looks pretty enough on the paper and delivers us over to the tender mercies of the nurseryman with his catalog,—surely a mournful fate. Our landscape collaborator knows enough of architecture, its problems and how we attack them, and we in turn know enough of his art for us to be able to give each other intelligent criticism, as our designs develop, step by step and always in step. At least this should be the case. If it is not, we are not, either of us, properly educated.

The same thing holds true of the painter and the sculptor. The more of both that an architect can himself be, the more

will sympathetic comprehension reside in him, the more nearly will he be a duly qualified architect, fit to collaborate with other artists. And the more he knows, the less arrogant will he be; the less stubbornly insistent upon his all-pervasive grandeur, for modesty and humility are the children of wisdom, and much knowledge teaches us appreciation of the other fellow's difficulties and achievements. We are now, for the purposes of our present argument, projecting ourselves into a by no means unattainable Utopia. So we shall ask the painter and the sculptor not to work for us, but with us. Let us instantly disabuse our minds of the notion that we are about to abdicate, to shuffle off one iota of our responsibility. We need not stretch our imaginations unduly to think of, say, some great room. But can we not see ourselves pausing in our determination of that feature, with its main policy clear in our minds, its bones, so to speak, settled upon, but pausing while our collaborators discuss with us the details of its expression? Shall we not rejoice as their suggestions, following upon each others' heels, show us where and how details may be left to them; how spaces may be treated in ways we had not thought of; effects obtained; accents placed; harmony and rhythm found; the very solidity and structural significance of our design enhanced? A distinguished architect has drawn a picture in his paper read at the last regional conference in New York. Mr. Morris, describing how the Great Hall of the Cunard Building was worked out with Barry Faulkner, Ezra Winter and others, says: "Together we worked, composing the subdivisions of space, the enrichment of the dividing members and the general distribution and key of color. Throughout, Winter showed his mastery of the problem and never for a moment forgot his architecture; himself he forgot completely . . . it really was a great, happy family." He speaks of Faulkner's lovely wall maps, and tells how the color of the composition had to be brought down upon the walls, "and the whole arranged in a single composition, lying in peace and quiet upon the surfaces"; —how John Gregory had the floor as a virgin field, on which to make his wonderful seal, and of the good fellowship and harmony in which appear the works of Jennewein and Nebel and Yellin. Most movingly, in a few words, he refers to the Sunday visits of the mechanics and laborers of all trades, come with their families to admire. And he says that "here were the works of painter, sculptor, modeler and ironworker living in harmony and not intentionally, at any rate, shouting at one another. . . . What glorious fun!"

Consider now the craftsman. Thus to separate him, to set him apart, is but a clumsy device of convenience. For we know very well how much of him is artist and how much the artist must ever be a craftsman. Indeed, it is only in this restless, discontented day that we know of clamorous incompetence masquerading as art, under the shallow excuse of self-expression, claiming what the primitive savage would deny. Never can foul ignorance and clumsy posturing be source or evidence of originality. The skilled handiwork of the artificer is forever the sober, convincing proof that puts to shame the flimsy pretense of the untrained. In solemn verse Scripture gives the craftsman his full due.

The house is not complete until its master may live in it, and to make it so requires the work of many crafts. The architect, if he shall speak with perfect honesty, cannot say of it all, "I did it." Over and over again his dependence has been upon the skill of the craftsman. Perhaps he designed such and such a fine example of iron or bronze, of tile, of relief in whatever substance, making but a curt gesture of gratitude to the memory of the dead and forgotten master who afforded him inspiration, and trusting to cunning hands for the execution of his conception. Perhaps he leaned entirely upon the artificer. We have all done both these things. There is no hard and fast rule to lay down, but at least we should acknowledge our indebtedness.

We have established a great institution, founded specifically upon the idea of collaboration—the American Academy in Rome. To the Academy go the winners of fellowships in architecture, painting, sculpture and landscape architecture. They have passed through the school stage before they go, and are qualified for their three years of research, of close contact with all that Italy and the classic lands offer of stimulus to their riper development. There they live together, work together, talk together, travel together, learn to know each other and their several ways. Beyond the shadow of a doubt they come back here with a perception of the meaning to them all of architecture such as they had little glimmering of before they went. But why should they go unprepared in this respect? Why should not our schools here at home lead them from the very start along the paths of collaboration? We have fine arts courses in our universities. We have schools in which the arts of design are taught, in many cases several of those schools side by side. To what extent are they coördinated? Do they interpenetrate, teach and practice the community of endeavor, the identity of interest, establish the vital personal contact of artist with artist, without which their teaching can never, never be of full effect? Not much, we think; somewhat, sometimes; in a few cases, increasingly; mostly, not at all. Of this vast educational field we do not really yet know enough to say with accuracy just what exists or what promise is offered. We content ourselves for the moment with noting the deep importance of its adequate survey, with a view to shortly enormously increasing its usefulness.

The result of the annual election of officers of the American Institute of Architects follows:

President and Director, Milton B. Medary, Philadelphia.
First Vice-president and Director, William Emerson, Boston.
Second Vice-president and Director, C. Herrick Hammond, Chicago.
Secretary and Director, Frank C. Baldwin, Washington.
Treasurer and Director, Edwin Bergstrom, Los Angeles.
Director, Fourth District, William H. Lord, Asheville, N. C.
Directors, Seventh District, Henry C. Hibbs, Nashville: Olle J. Lorehn, Houston, Tex.
Director, Ninth District, Myron Hunt, Los Angeles.

MEETING OF THE PRODUCERS' COUNCIL

COINCIDENT with the convention of the American Institute of Architects the Producers' Council held its semi-annual meeting and received reports of progress which not even its most sanguine sponsors had anticipated, in view of the short period in which this organization has been functioning.

It will be recalled that when the idea of having an organization of manufacturers of building products affiliated with the A. I. A. was first broached, there was some opposition to the movement. However, so wisely and so constructively have the affairs of the Council been administered that its probationary period has passed, and the Board of Directors of the Institute has sanctioned an official continuation of the Council for a five-year period. This automatically removes the necessity of proving the Council's right to existence and releases its full energies for the solution of important problems which will result in a better understanding between the architects and the producers.

Sessions of the Council were addressed by several architects, among them President Medary of the Institute, Max B. Dunning, William B. Ittner and Edwin H. Brown. The feature of the Thursday luncheon of the convention was an address by A. K. Baylor, of General Electric Company, representing the Producers' Council, who sketched in broad lines the benefits to be gained from coöperative effort such as the Council has sought to promote, and which has for some time been successfully undertaken in other fields. He placed particular emphasis on the work which has been done in the electrical industry in bringing the engineering profession and the manufacturer together for the benefit of both these bodies.



WEST VIRGINIA CAPITOL, CHARLESTON

CASS GILBERT, ARCHITECT

From a Drawing by Hugh Ferriss

The
ARCHITECTURAL
FORUM

Volume XLVI JUNE 1927 Number 6

Designing Capitol Buildings

By JOSEPH H. FREEDLANDER

PREËMINENTLY, a state capitol must symbolize the majesty of government. It must be expressive of the stability and dignity of the state, and it must typify in its architecture the enduring place it holds in the federal government. Whether the facade be decked out in Classic, Gothic or Assyrian raiment is a matter of little moment, provided always that the impression conveyed be one of sincerity, simplicity and charm. From time immemorial, by virtue of tradition and custom, a dome has been thought necessary to embody this conception of a capitol building. Only within recent years has a new form, partaking of the nature of a tower, been essayed. Which best expresses the function of the state is a moot question; it is entirely a matter of opinion and taste, depending on the individual point of view and to some extent upon the environment.

The general arrangement of the plan has as well been a matter of tradition and precedent. The two houses of the legislature have usually been placed on the second floor, presumably to make provision for a vast flight of exterior steps, a feature associated in the public mind with every type of public building. This is wholly impracticable for several reasons. In the first place the public, in these days of high-speed elevators, objects to climbing stairs, and in fact we are credibly informed by eminent medical authorities that the leg muscles used in this prehistoric form of exercise are gradually becoming atrophied; secondly, an entrance to the ground floor with direct access to the elevators is usually provided; and in the third place, the entire space under the legislative chambers on the ground floor is wasted as far as it serves any practical purpose; occasionally it is turned into a "statuary hall,"—with all that that term implies. This use it would be well to avoid.

The senate and assembly with their dependencies should be located on the ground floor. Ready access thus tends to expedite the public business and saves much time in the despatch of routine affairs. The committee rooms should be conveniently grouped around the senate and assembly chambers, each of which should be provided with a spacious and commodious lounging room and ample cloak rooms. The lounge is the social center, and too much care cannot be exercised to make it attractive and restful,—as much so as a similar room in a club. Modern practice has clearly demonstrated that all of the other departments caring for the state's business should be housed in a separate building, connected by corridors, or in wings in the rear of the capitol structure proper. Arranged in this manner, the business of the departments can be carried on independently of the sessions of the legislature and without interference of any kind. In fact the entire legislative floor may, when the legislature is not in session, be completely closed off with a consequent saving of supervision and maintenance. Another important feature is the arrangement of the senate chamber and that of the house of representatives or assembly. They should be opposite, so that the respective presiding officers may face each other and may reciprocally see what is going on from the rostra. This is necessary when a concurrent resolution, or other legislation of a similar nature is to be passed. Other adjuncts briefly are a legislative library, a state apartment for the governor's receptions, a lobby for the two houses, and a commodious and spacious room for public hearings by the governor

All of the other governmental departments should, as was already said, he housed in wings, or, better still, as is being done at present in Albany, a separate building should be erected. In the state of New York these departments are so numerous that a modern office building is to be entirely devoted to them.

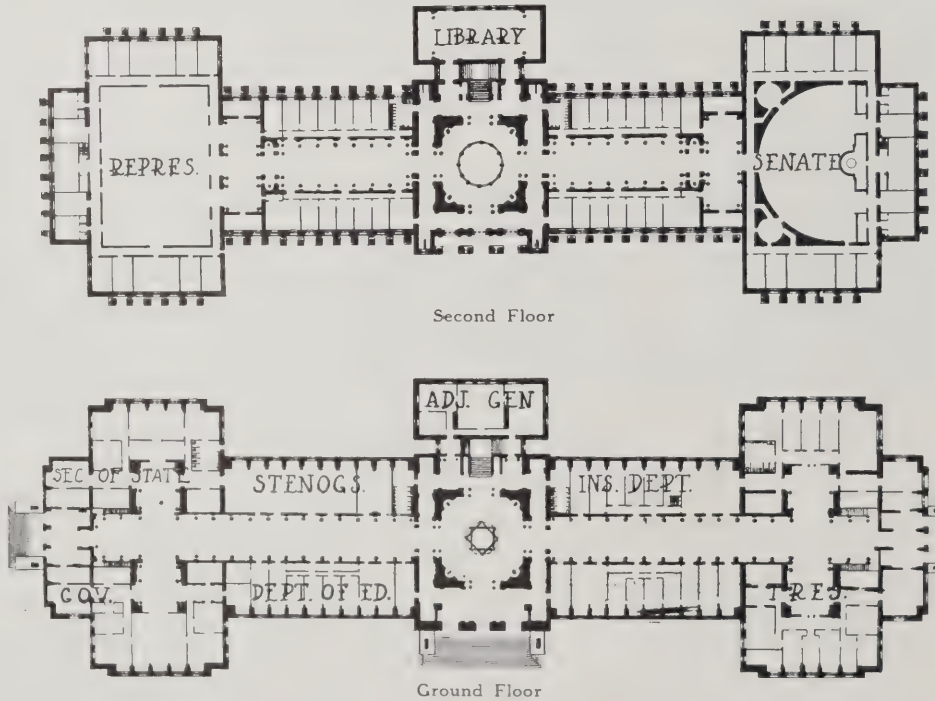
Study of many state capitol buildings will prove that they have in the vast majority of instances been modeled or patterned as closely as possible after the national capitol at Washington, two of the most notable exceptions being the New York capitol at Albany and that of Nebraska now being built at Lincoln. The former is an exception to the general rule which is hardly likely to attract a following, but the latter by reason of its great charm and originality may well exert a wide influence in the planning of such buildings for states which are not already well supplied with capitols. An architect who attempts to follow the excellent lead of the late Mr. Goodhue must, however, be prepared to face and to overcome more than a little opposition. The American people are very largely—if not irrevocably—committed to the firm belief that a state capitol must be designed



A Model, Missouri Capitol Competition
Joseph H. Freedlander, Architect

with four or at least two impressive facades in Classic fashion, replete with colonnades making use of some one or even more than one of the orders, and that the entire structure must be surmounted by a dome. Such is the popular idea, and any attempt to lead an advance in any other direction is likely to be attended with difficulty; public opinion is stubborn.

The state capitol, in fact, is a peculiarly American institution, called into being by conditions which are themselves peculiarly American. Elsewhere in the world a province or department may have its own governmental building or buildings, but in a country which is made up of 48 political units, each a sovereign state, it can readily be seen that this sovereignty must be given due and proper recognition. We have inherited from the antique world the idea that political power can and indeed should be given structural expression, and so we have impressive facades, colonnades and pediments, domes and sometimes minor domes as well; within, dignity is given suitable



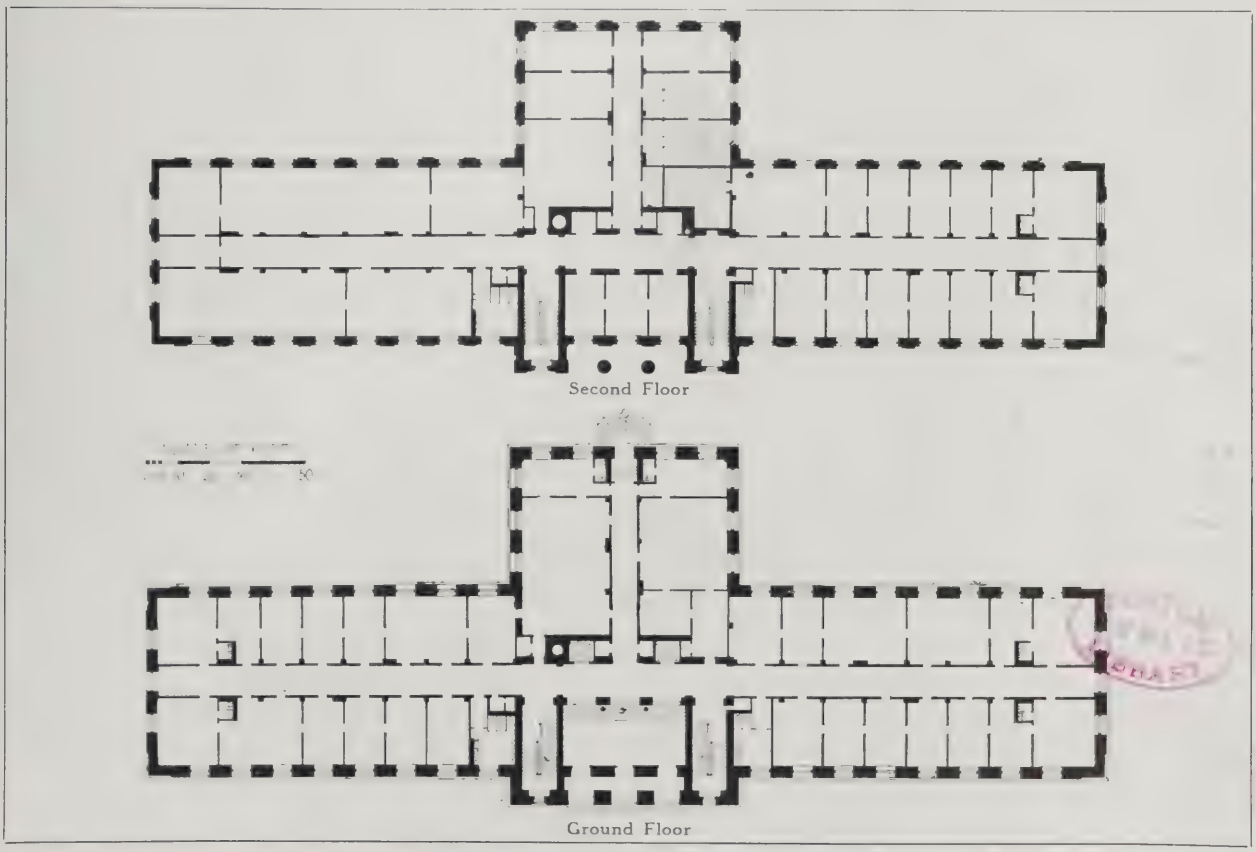
Plans, Preliminary Study, Missouri Capitol Competition
Joseph H. Freedlander, Architect



West Virginia Capitol, Charleston
Cass Gilbert, Architect

architectural recognition by walls and floors of marble, more colonnades at times, and ceiling areas are likely to be adorned with mosaic or mural paintings which draw somewhat freely upon history, mythology and symbolism,—with results which are sometimes fortunate and successful and sometimes not.

One thing, however, the architect of a capitol should always bear in mind,—that any attempt to enlarge a capitol building is almost certain to be attended by disaster. By some miracle the numerous additions which have been made to the nation's capitol have made it more beautiful and far more graceful than it was originally; but miracles cannot always be counted upon, and on the other hand there is the building which serenely crowns the brow of Beacon Hill, designed originally by the gifted Bulfinch, in the adding to which even architectural skill was not able to circumvent wholly the mischievous work of politicians, alert and eager whenever public work makes profitable the exerting of sinister influence.



Plans, Office Building No. 1, West Virginia Capitol, Charleston
Cass Gilbert, Architect



ARCHITECT'S DESIGN FOR OFFICE BUILDING



OFFICE BUILDING NO. 1
WEST VIRGINIA CAPITOL, CHARLESTON
CASS GILBERT, ARCHITECT

Essex County Hall of Records, Newark

GUILBERT & BETELLE, ARCHITECTS

THE architect of a public building intended to serve the needs of a thriving and growing community is not always able to visualize or estimate the demands which may be made upon the structure ten or even five years from the time it is built; there are many instances where a structure has been entirely outgrown before it was even occupied.

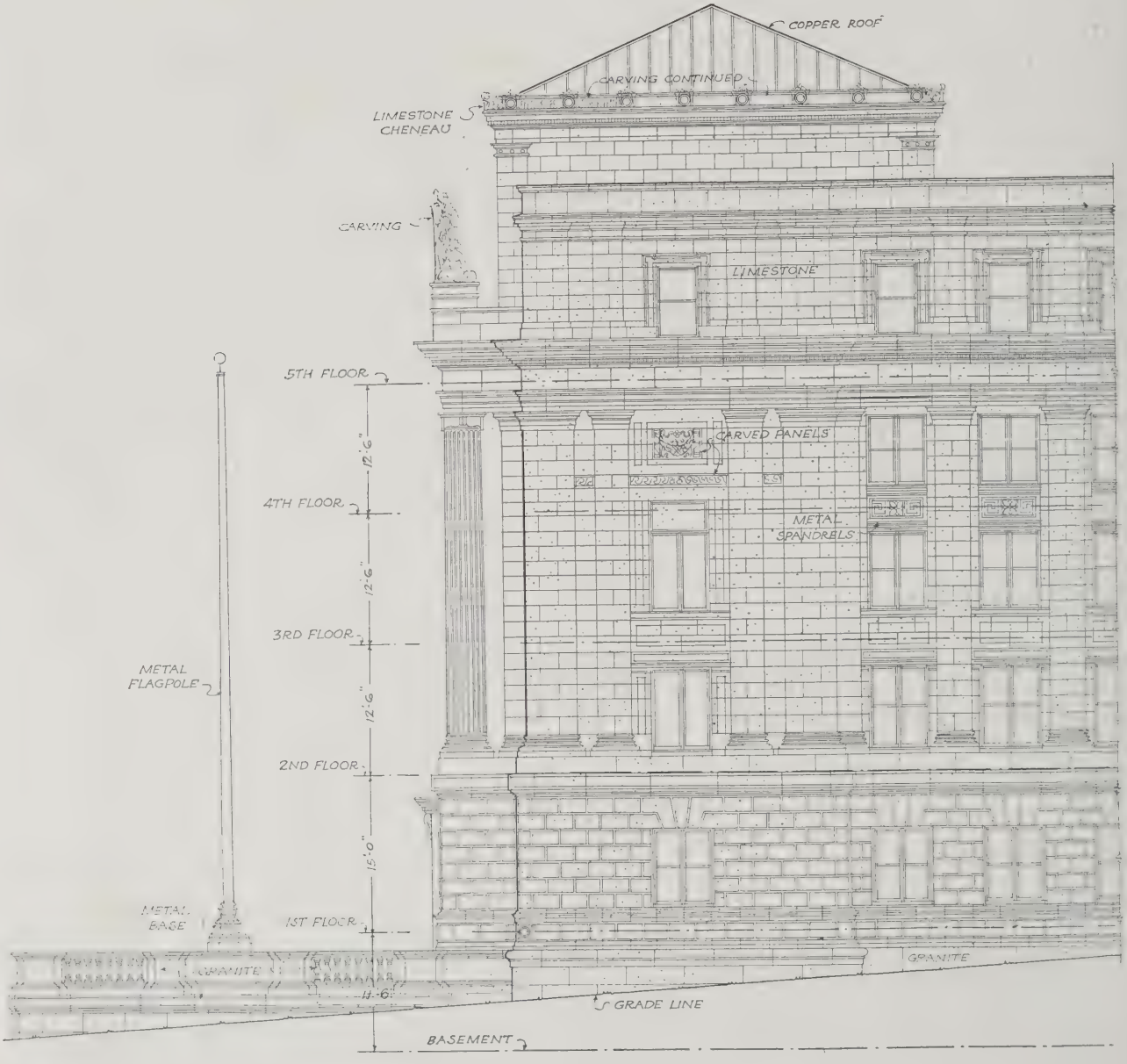
In the year 1902 there was instituted a competition for designs and plans for a highly important public building. This was the Essex County Court House, located in Newark, and from designs and plans by many of the most eminent architects of the period those of Cass Gilbert were selected, and the Court House (Plate 109) was built from them, being considered a successful structure of its class. But like national, state, and municipal governments, the government of a county makes greater and greater demands with the passing of years, and this is particularly true of a county which is so close to New York as to form practically a part of its metropolitan area. It was supposed, when it was built, that the size of the Essex County Court House would render it adequate for many years to come, but unexpected increase of population in Essex County and the correspondingly large increase in the extent of public business soon meant its outgrowth, and about 20 years after its erection it was found necessary to secure more area for the county's offices. Adding to a monumental public building is very rarely successful from an architectural point of view; frequently it cannot be done at all, and in this particular instance it was decided to purchase property across the street from the Court House for an accessory or auxiliary building to house numerous executive departments, the Court House proper being used entirely for necessary court rooms.

This new structure, the Hall of Records, of which Guilbert & Betelle are the architects, has been designed in the same general Classic style as the building to which it is an auxiliary. The architects have apparently successfully solved the highly difficult problem of rendering a new and larger structure subordinate in architectural importance to a building older and smaller. This subordination seems to have been accomplished by such means as planning the approaches to the newer structure upon a scale of far less magnitude than was adopted in designing those of the old, and while retaining the same general arrangement of stories to render the story heights somewhat lower, and to use for the new building detail which while agreeing with that which was used in designing the old is obviously of less importance and probably of slightly reduced scale.

The Hall of Records is designed, as was the Court House, with a basement floor upon which rest three stories and an attic. At the middle the principal facade is brought very slightly forward, giving the effect of a pavilion, and eight columns with Doric capitals support the attic story. The basement story of the entire building is rusticated, and columns or pilasters extend to the cornice which defines the base of the attic floor. This structure houses the county clerk and his numerous assistants and large clerical force, the registrar of deeds, the surrogate, the grand juries and their extensive dependencies, and a number of other departments which are necessary to the proper government of Essex County. At the rear of this new Hall of Records there has



Essex County Hall of Records, Newark
Guilbert & Betelle, Architects



ELEVATION AT CORNER

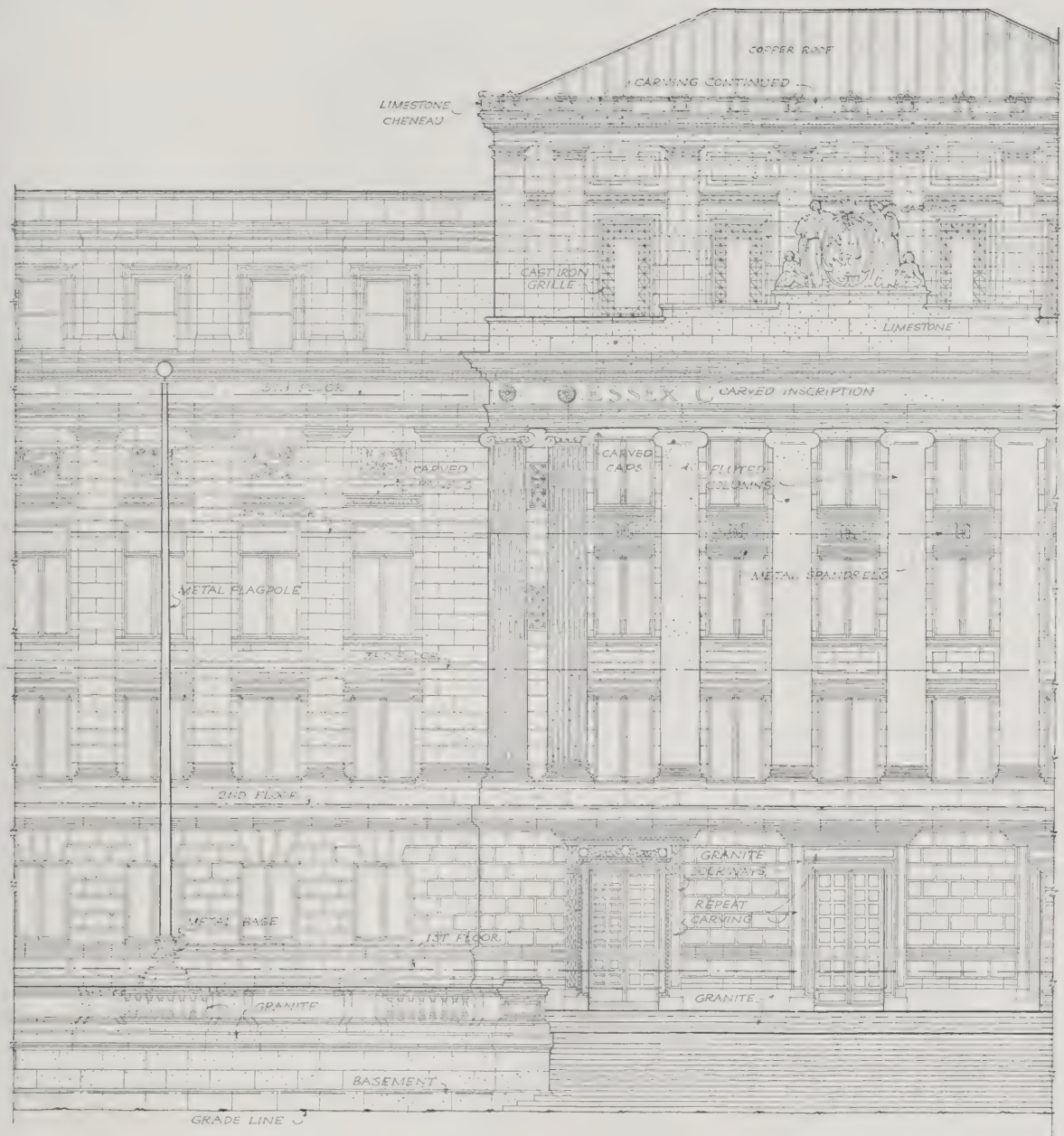
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ESSEX COUNTY
HALL OF RECORDS
NEWARK N.J.
GUILBERT & BETELLE ARCHTS, NEWARK N.J.

JUNE 1927

NO. 32

BOSTON PUBLIC LIBRARY



FRONT ENTRANCE DETAIL

SCALE 10 0 10 20 30 40 50 IN FEET

ESSEX COUNTY
HALL OF RECORDS
NEWARK, NEW JERSEY
GUILBERT & BETELLE, ARCHTS NEWARK N.J.

JUNE 1927

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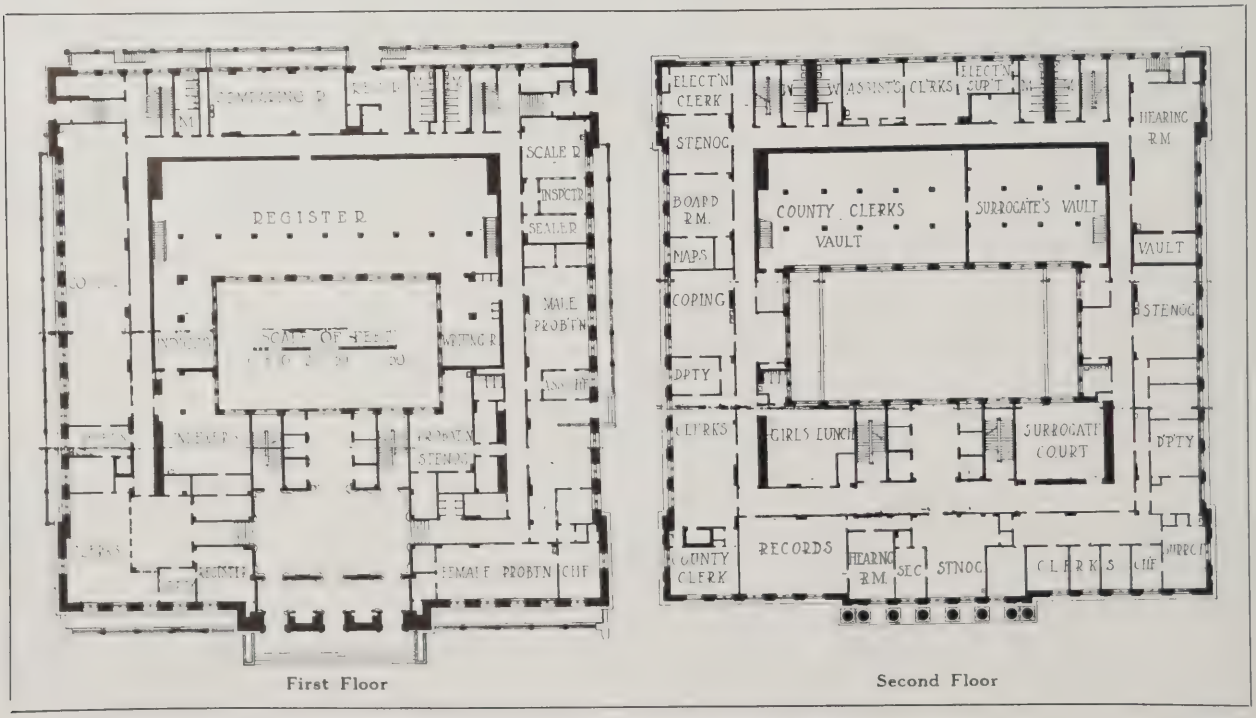
The Architectural Forum Details



Present Court House and New Hall of Records Building, Newark

been built a power plant for the supplying of heat and electricity to both the new building and the Court House. A tunnel joins this power house to the Hall of Records, and another tunnel unites the Hall of Records and the Court House across the street.

The materials of which the structure is built aid considerably in the interpretation of its classical character. Limestone has been used for the building's exterior; much of its trim and the steps which lead to the main entrance are of granite, and granite has been used for building the parapet which encloses the area at the front of the Hall of Records where it is set back from the street. Several flagpoles of metal are supported by bronze bases which stand upon granite plinths. The massive decorative doors at the entrances are of bronze, spandrels where they occur between windows on different floors are of metal, and the building is roofed with copper.



First Floor

Second Floor

Plans, Essex County Hall of Records, Newark

Guilbert & Betelle, Architects

Designing and Planning of Court Houses

By A. TEN EYCK BROWN

THE designing of the average public building, regardless of its size, must necessarily be approached from an entirely different angle from that of the usual commercial structure, primarily on account of its very diversified requirements, and secondarily by reason of the need for thorough and simple circulation. In the usual court house, regardless of its location or variation in requirements, there are, at any rate in modern structures, three main divisions,—first, that of the officials having to do constantly with the public; second, that of the court or courts and their adjuncts; third, that of the jails, covering administration and cell blocks, exercise corridors, etc.



Rowan County Court House, Salisbury, N. C.
A Ten Eyck Brown, Architect

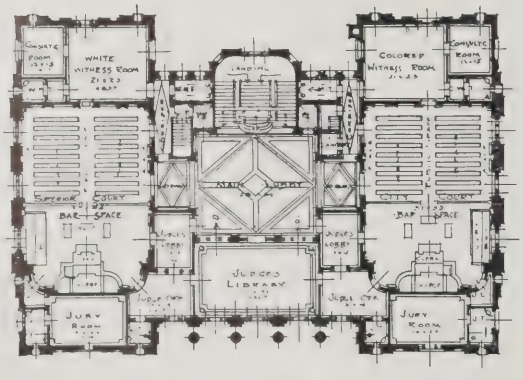
The first requirement calls for a simple, straightforward plan, as the accommodation of the officials must be considered on the basis of prompt and efficient service to the public. Therefore, entrances, exits, public lobbies or areas, stairs, elevators, and other means of proper circulation are of paramount importance. The second requirement as to courts and their adjuncts also, of course, includes the all-important items of proper ingress and egress and general circulation, also the proportion of the court rooms devoted to the bench, bar and jury and public. In order to secure a really thoroughly working unit, the adjuncts, covering judges' private rooms, chambers, etc., rooms for solicitors or attorneys, jury rooms, jury dormitories, etc., must be accessible from the bench end of the room, and preferably opening off a private corridor with separate staircases or elevators in a tall building. Then, too, the best handling of prisoners in criminal courts from jails or detention rooms within the buildings or outside through private means of access is an essential item. The third item, of jails, in the modern sense is almost a problem in itself, but the main features to be taken care of are large, airy cells, containing not less than four prisoners or more than eight, and opening directly off of day rooms with ample ventilation. Circulation and good means of oversight by the guards, are essential. The arrangements for sanitary requirements and ample utility corridors are also important. While the feeding of the prisoners can be done in the day rooms or dining rooms, use of the former is considered preferable. This necessarily brings us to kitchens, store rooms and refrigerator rooms, which must be well laid out and convenient in plan and location for direct service. Another important point is the accommodation for the administration offices, living quarters for guards, matrons, doctors, etc., together with infirmaries for sick prisoners. The segregation of the sexes and races must be carefully studied, which is also true of that of the juvenile prisoners, into which must enter proper study of the various classes of prisoners, indicating, as can be seen, a special problem in itself.

Naturally, in the last analysis, simplicity and directness in planning result in, first, convenient structures, and second, in buildings easy to take care of and involving a minimum of upkeep. In consequence, careful study must be given to the selection of simple and durable material, both in the structures themselves, their interior finish and in the mechanical equipment, as no class of building receives the hard usage, or ordinarily receives as little care as public structures. This not only tends to reduce the cost of upkeep and repairs, but also makes the sanitation of a building used at all times by all classes of people much more efficient and feasible. Mechanical equipment of buildings of this character should be most carefully designed, specified and installed, especially in regard to plumbing, tube systems, intercommunicating telephones, etc., as no matter how handsome and well laid out a structure may be, if these essentials are not satisfactory and durable and more or less "fool-proof" the result will not be satisfactory, especially as there is no class of buildings so constantly subjected to criticism, just and unjust, from the man on the street and the temporary occupants of the various offices as a court house. Therefore, the avoiding as far as humanly possible of any tenable cause for criticism should be had in mind at the outset. There is likely to be enough anyway!

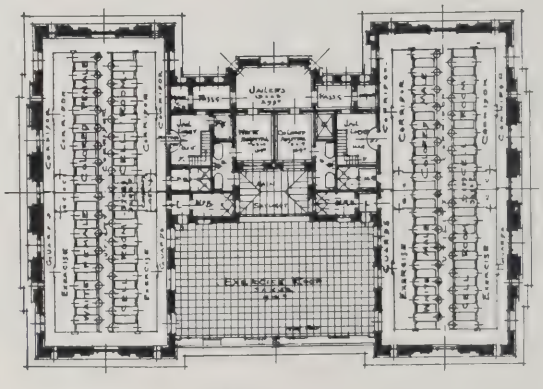
While the writer has designed a great many court houses of different sizes and degrees of importance throughout the southern territory, a certain number only have been selected for illustration here in order that the different developments of the problem may be shown in more or less detail as to sizes and accommodations, and the changes in the use of such buildings in the last 10 or 15 years noted. One outstanding detail, which has never been a part of the average court house, is the jail, which of recent years has become incorporated in especially the larger structures, for reasons of economy, convenience and sanitation, all reasons which are quite obvious when there are taken into consideration the inconvenience and dif-



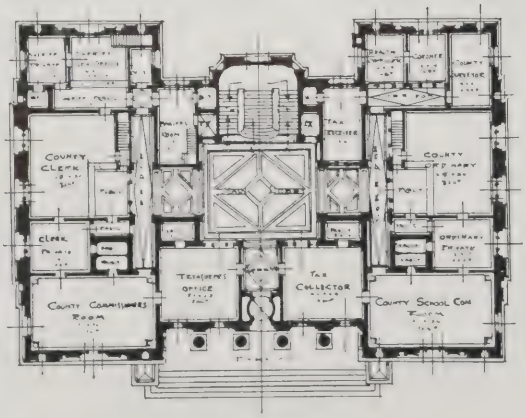
Clarke County Court House, Athens, Ga.
A. Ten Eyck Brown, Architect



Second Floor



Third Floor



First Floor

ficulties that have been caused by separate structures in the average community. There are approximately three classes of buildings which might well be considered here: first, that necessary for the small county community; second, that for the larger counties where small cities are used as county seats; and, lastly, where the county seat is an important city, and where what might be called the "metropolitan" building is required, all departments well equipped.

Orleans Parish Court House, New Orleans. This building, the design of which is the result of a competition held some years ago, is probably one of the last monumental structures not carried out along the lines of the monumental office building, as most modern court houses of importance now are. The layout of this building was primarily worked out on



Orleans Parish Court House, New Orleans

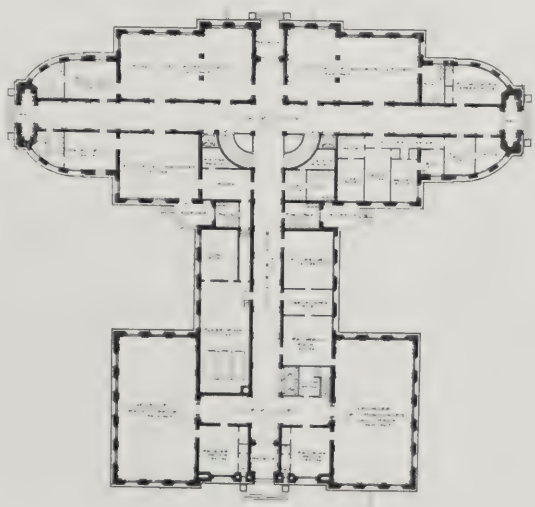
F. W. Brown, A. Ten Eyck Brown, and P. Thornton Marye, Associated, Architects



Third Floor



Second Floor



First Floor

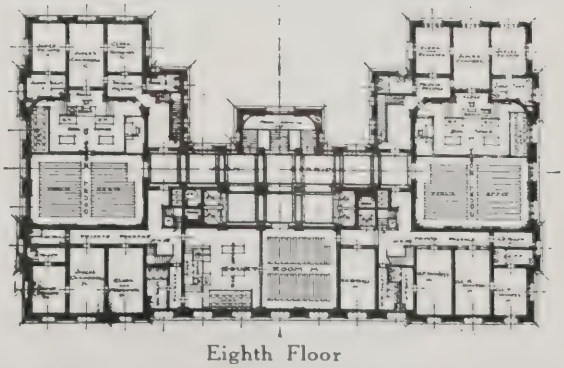
account of the climate, in order to secure the greatest amount of air and ventilation, resulting in a plan in which every room or space is on the outside. It will also be noted that the circulation as to corridors, elevators and staircases is very simple and direct. Very careful study was given to every possible detail. The requirements of the average building of this character are quite different in this community on account of the difference in the fundamental law, in that while the duties of the various officials cover practically the same needs as they do elsewhere, they have quite different designations. Also in this particular building there are housed a great many offices that would ordinarily be taken care of in state buildings or other structures in the North and East and in the greater part of the South, on account of the peculiar conditions and requirements of this



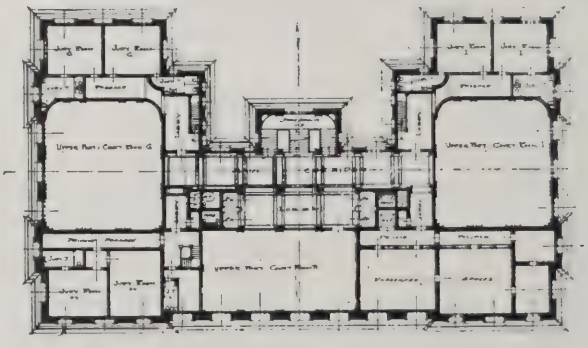
Fulton County Court House, Atlanta
A. Ten Eyck Brown and Morgan & Dillon, Associated, Architects

locality. The use in Louisiana of the Napoleonic code makes a trial by a jury very seldom invoked, and then only upon the exercise of the constitutional rights of the citizens, thus eliminating a great many adjuncts to court rooms that are usually found necessary, considerably changing the building plan.

The accommodations here include rooms for the supreme court and the state library, which are segregated upon the upper floor of the building without interfering with the regular business of the parish taken care of in the rest of the structure. Buildings of this character are especially effective when placed in large open areas and made parts of civic center plans. The general schemes, however, for the usual public building and its location are dependent on so many conditions that each community necessarily



Eighth Floor



Ninth Floor



Albany County Court House, Albany
Hoppin & Koen, Architects

must work out its own problems in the required way.

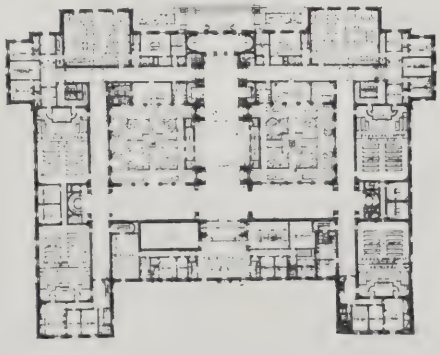
Rowan County Court House, Salisbury, N. C. This building is an example of that usually required for the average-sized community, and in addition to the usual accommodations for the county officials it contains one court room with the usual adjuncts described in the opening paragraphs of this article as necessary for the proper conduct of the business of the average county. The structure is entirely of reinforced concrete. The exterior is of Rowan County granite, except that the columns, entablature and main cornice are of granite terra cotta. There is no



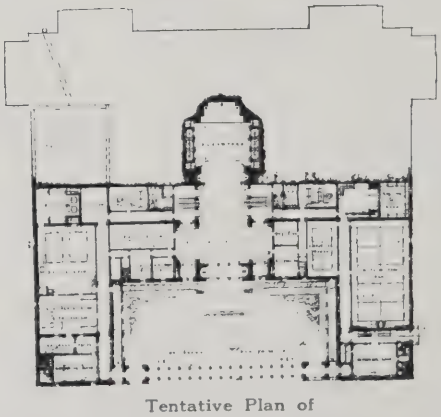
Douglas County Court House, Superior, Wis.
J. W. Royer and E. S. Radcliff, Architects



Preliminary Study for Providence Court House Competition



Tentative Plan of
Benefit Street Floor



Tentative Plan of
South Main Street Floor

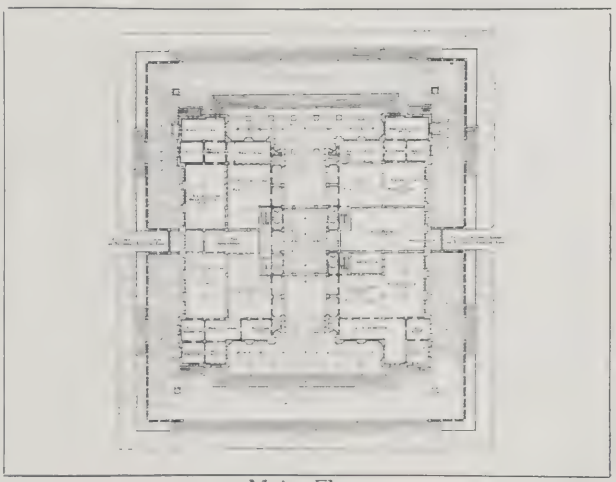


Dade County Court House and Miami City Hall

A. Ten Eyck Brown Architect; August Geiger, Associated

jail in this building, it being on an adjoining site, but this feature is taken care of by a detention room in the basement to which prisoners are brought as they are needed in the court room on the second floor. The need of such a room is entirely evident.

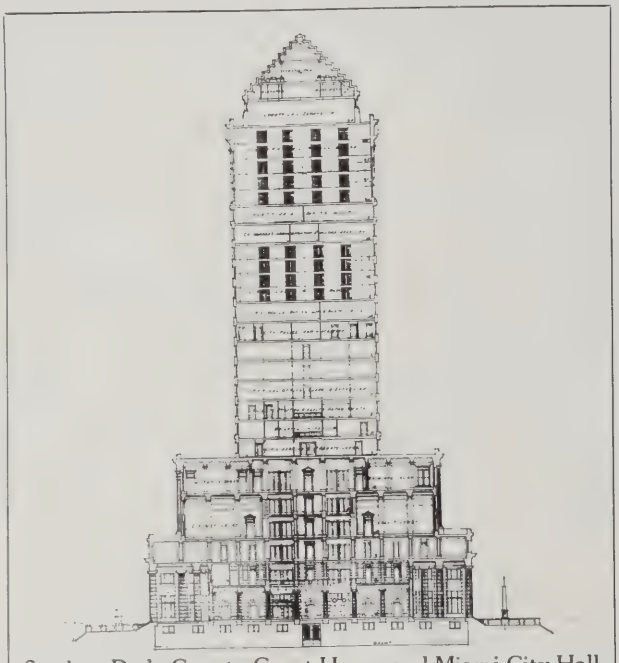
Clarke County Court House, Athens, Ga. At the time this structure was built, the combination of court houses and jails was first being discussed, and used in a few isolated cases throughout the country. It was adopted here primarily for reasons of economy and secondarily for reasons of convenience. The accommodations covered in this building are slightly different from those of the average court house, in that in addition to the usual business offices for the county officials there is taken care of complete equipment for two different court rooms and a library



Main Floor

connected across the second floor at the front of the building, laid out in a very symmetrical manner. They take care of, to a reasonable extent, the requirements explained in the beginning of this article, in regard to the various necessities for proper court house planning to obtain good circulation convenient to court rooms by the officials; and it disposes the various functions in their proper and logical relation to the entire structure.

Fulton County Court House, Atlanta. Of the metropolitan court house type referred to, this building is perhaps a very good example, in that it carries out the idea of the monumental office building, while at the same time it takes care of the peculiar requirements of this class of structure. In a general way, this building is ten stories high and contains besides the usual record rooms, official departments, etc., 13 court rooms with their adjuncts. The entire basement, which is practically out of ground on account of the use of a sunken area immediately adjoining its outer walls, is occupied by the record rooms of the county clerk, tax receiver, ordinary, etc., with the exception of a small portion which is devoted to the use of the detention room in which prisoners are held during the sessions of the various courts. The first floor is designed with a large central lobby with elevators opening off of it on either side and a monumental staircase toward the rear, while grouped around the central lobby are the public spaces and main offices of the officials having daily contact with the public, consisting in this instance of a tax receiver, county clerk, tax collector, county sheriff and county ordinary, the latter taking the position of probate judges in most states and requiring a small court and jury room for use when occasion requires.



Section, Dade County Court House and Miami City Hall
A. Ten Eyck Brown, Architect; August Geiger, Associated

As the necessity for court rooms was not yet fully determined when this building was planned, a sufficient space was allowed for additional court rooms on the upper floors, which is a point that should be considered regarding any building under contemplation, just as in the case of a commercial building it is necessary to take care of the probable growth on definite and economical lines, as far as can be done.

Dade County Court House and Miami City Hall, Miami, Fla. This building differs from the average court house in that it is a combination court house and city hall, and takes care of the necessary accommodations for all of the functions of both governments, including all of the necessary courts, jails, etc. In view of these requirements, a design was adopted that results in the placing of the officials of both governments that have dealings with the public frequently on the main level, while the other officials, courts and jails are accommodated in the upper stories. In a structure of this character, where so many departments are housed under one roof, the problem of circulation to be taken care of vertically by stairs and elevators is most serious, and has been successfully solved here by installing batteries of elevators having particular floors to take care of, although practically 50 per cent of them run through the building from top to bottom.

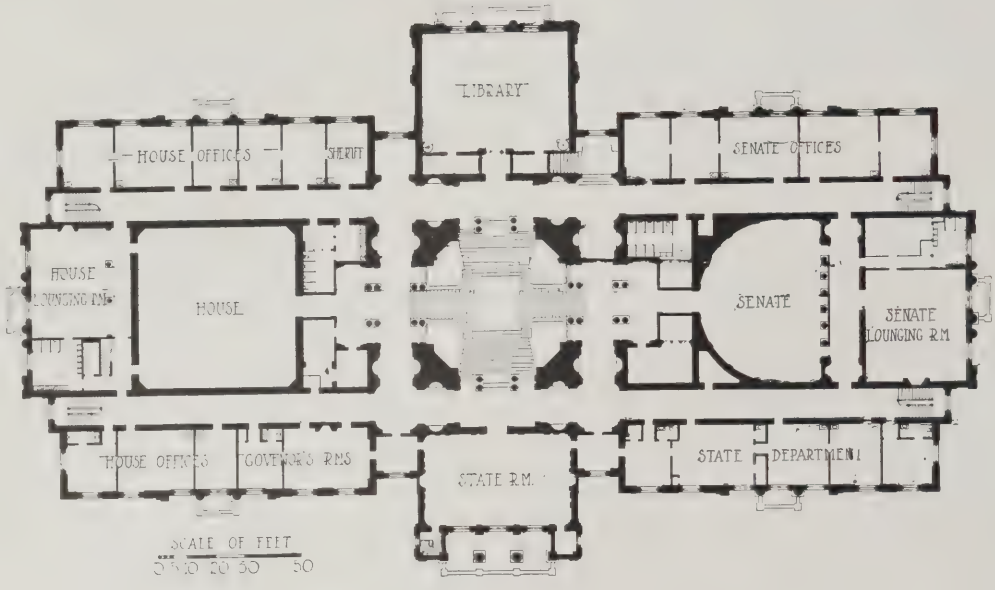
The basement of this structure, which is secured by raising the first floor above the street and making the approach easy and gradual by the introduction of a wide terrace around the entire building, is used for a garage for the cars of all of the county and city officials, thus solving a problem which is growing more and more complex on account of restricted parking area. This basement also makes possible the taking of prisoners into and out of the special elevators under cover, without the necessity of their being taken through the public halls and corridors.

The mechanical features of this building are especially interesting in that they have so many functions to take care of, consisting of the usual needs of the general offices and courts, and the special needs of the jails and the accommodations for the administration of the latter, together with living quarters for jailers and other attendants. In the layout of the jail portion of this building particular attention has been paid to securing the most modern accommodations possible, which will result in the use of larger cells as described in the beginning of this article, together with a day-room system of feeding and the exercise space for the prisoners, while other important details such as kitchens, laundry, infirmary, etc. are taken care of in a very complete manner, with the result that the operation will not only be feasible but convenient, and easily covered from a sanitary standpoint, the latter being one of the most serious questions where a jail building is incorporated in a court house. Also in this case ample provision is made in the various departments for future expansion, which point was particularly looked out for in the sizes and number of the court rooms and floors.

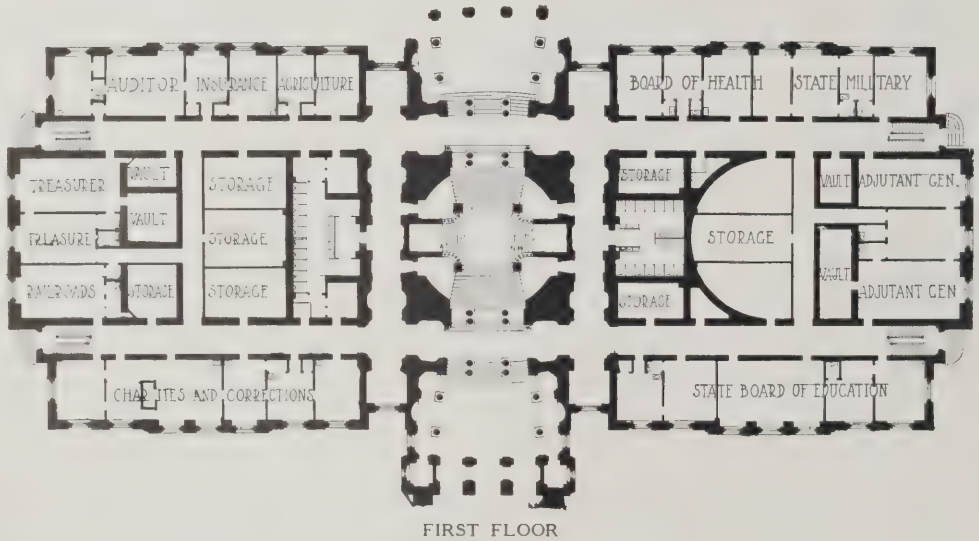


Plans on Back

RHODE ISLAND CAPITOL, PROVIDENCE
McKIM, MEAD & WHITE, ARCHITECTS



SECOND FLOOR



FIRST FLOOR

PLANS, RHODE ISLAND CAPITOL, PROVIDENCE

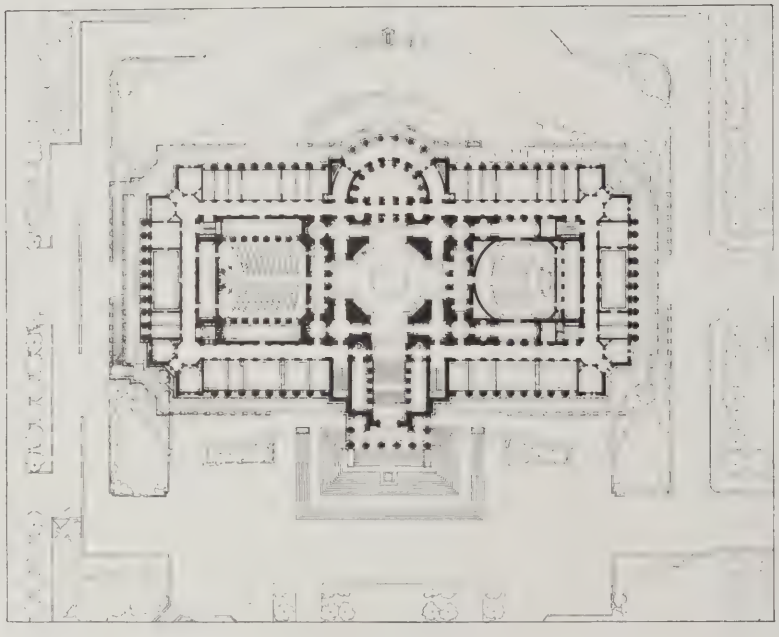
McKIM, MEAD & WHITE, ARCHITECTS



Plans on Back

MISSOURI CAPITOL, JEFFERSON CITY

EGERTON SWARTWOUT, ARCHITECT



GROUND FLOOR

PLANS, MISSOURI CAPITOL, JEFFERSON CITY

EGERTON SWARTWOUT, ARCHITECT



Photo, Sigurd Fischer

MISSOURI CAPITOL, JEFFERSON CITY
EGERTON SWARTWOUT, ARCHITECT



Photo. Sigurd Fischer

MISSOURI CAPITOL, JEFFERSON CITY
EGERTON SWARTWOUT, ARCHITECT

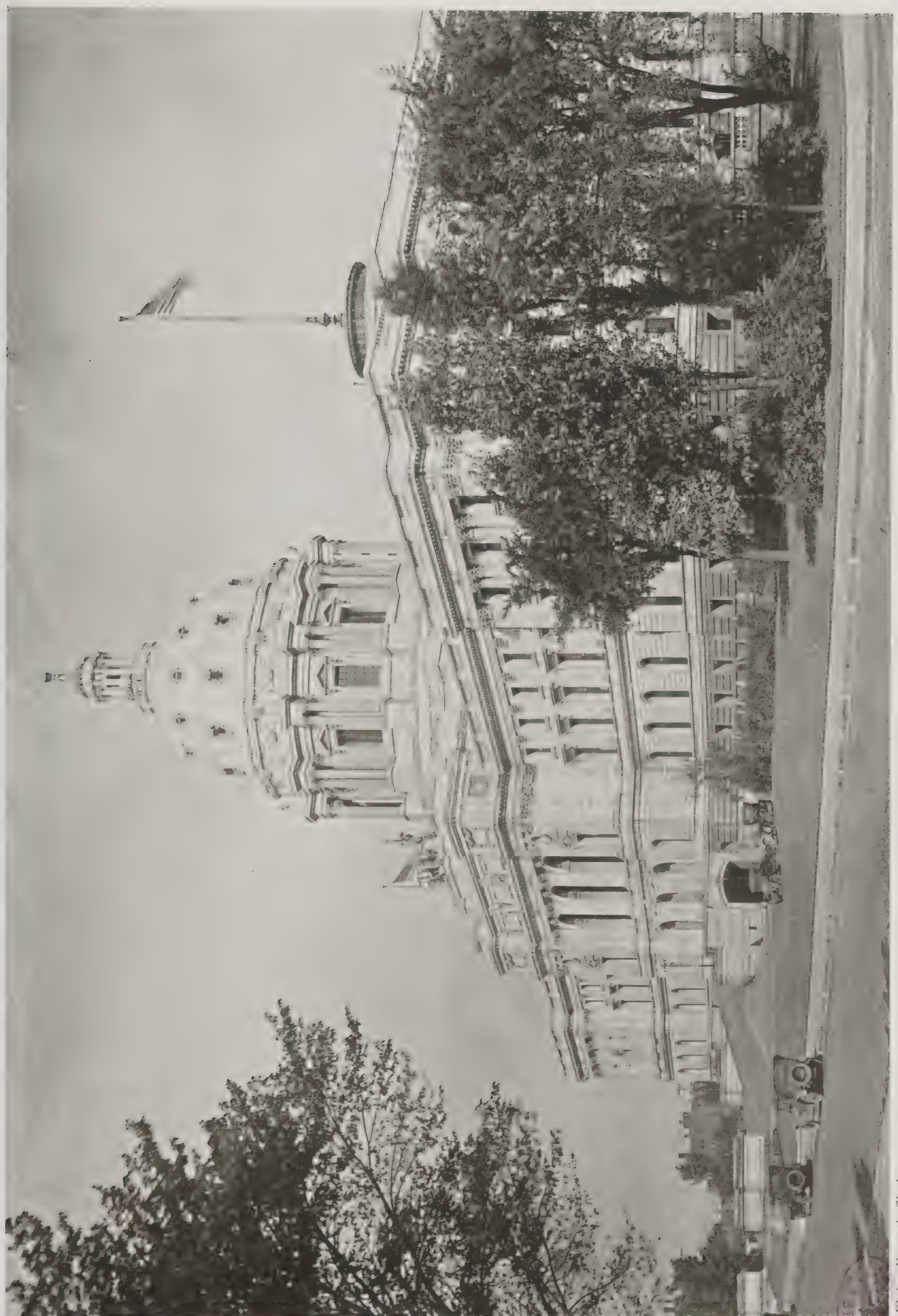
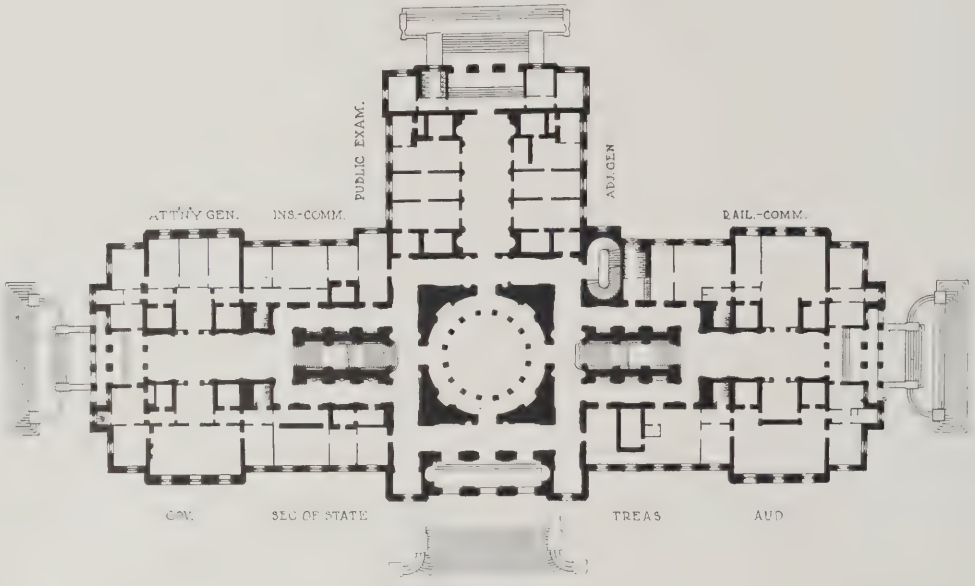


Photo: Kenneth Clark.

Plans on Back

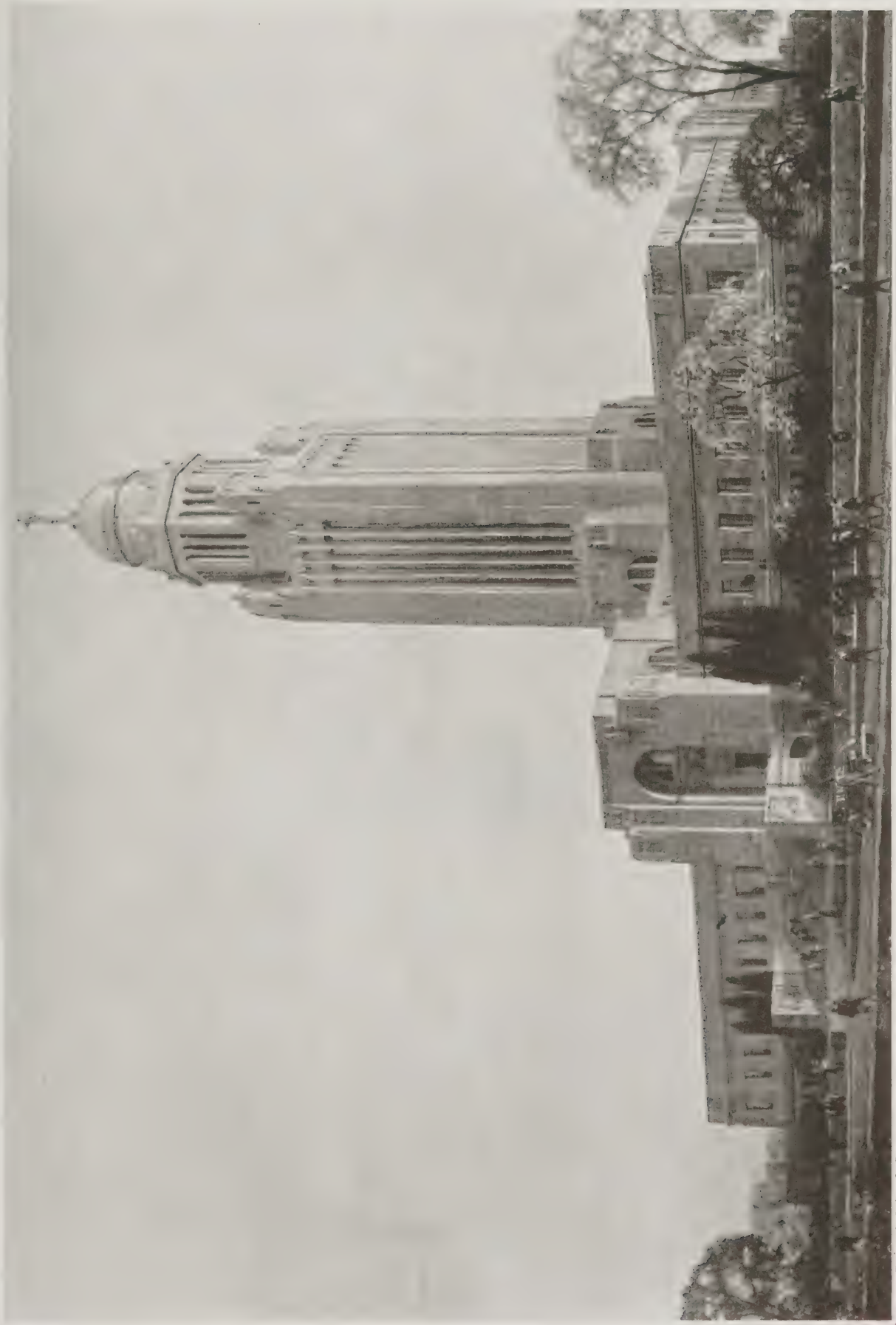
MINNESOTA CAPITOL, ST. PAUL
CASS GILBERT, ARCHITECT



GROUND FLOOR

PLANS, MINNESOTA CAPITOL, ST. PAUL

CASS GILBERT, ARCHITECT



NEBRASKA CAPITOL, LINCOLN

BERTRAM GROSVENOR GOODHUE ASSOCIATES, ARCHITECTS

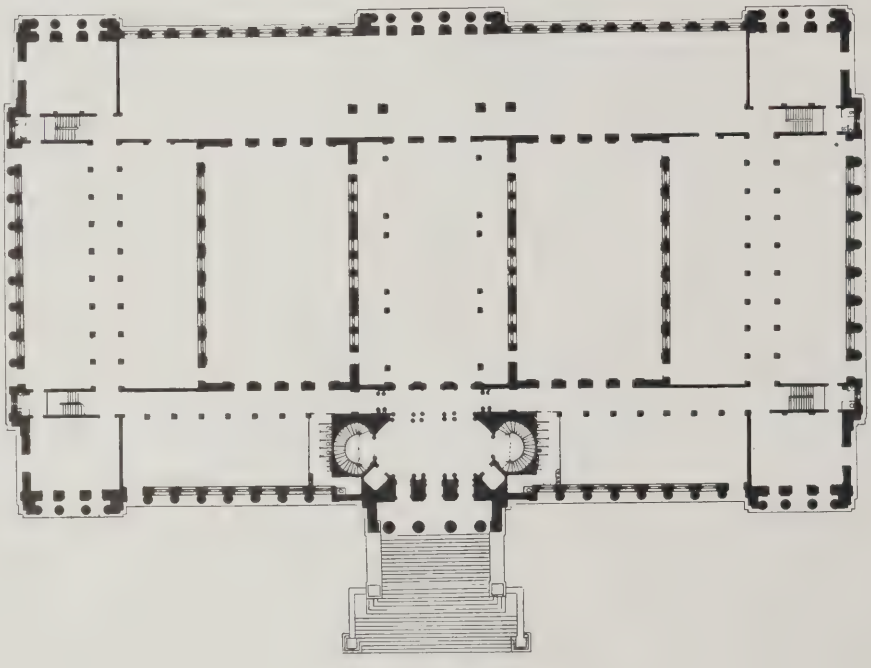
Photo, Peter A. Juley & Son



Plans on Back

INSULAR CAPITOL, MANILA

RALPH HARRINGTON DOANE, ARCHITECT



PLANS, FIRST FLOOR, INSULAR CAPITOL, MANILA

RALPH HARRINGTON DOANE, ARCHITECT



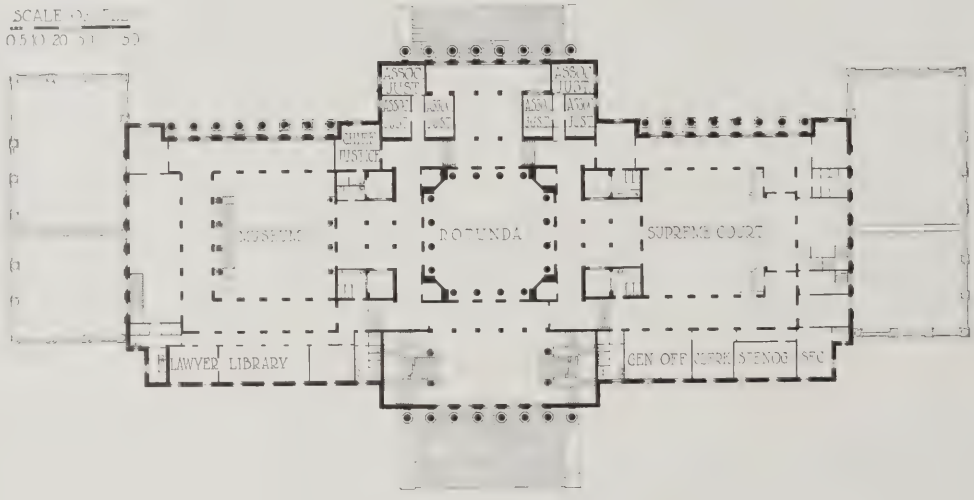
GENERAL VIEW OF MAIN FACADE



Plans on Back

CAPITOL OF PORTO RICO, SAN JUAN

CARMAEGA & NICHOLS, ASSOCIATED, ARCHITECTS



GROUND FLOOR

PLANS, CAPITOL OF PORTO RICO, SAN JUAN

CARMAEGA & NICHOLS, ASSOCIATED, ARCHITECTS

The Capitol of the Philippines

By CHARLES G. LORING

THE beginning of the century saw the constitution following the flag to the Philippine Islands, and the establishment of civil rule saw the government's architects following the army engineers. All unheralded, our one and only autonomous overseas department for official art came into being. Sanitation and road building were the first essentials, but there was soon an insistent demand for markets and schools, for town halls and court houses, and finally for an insular building or capitol.

To the Old World powers with many colonies such procedure was a matter of course, but to the United States bearing the "white man's burden" was a novelty; the supreme court, the feelings of the anti-imperialists, the A. I. A., and the native press all had to be considered. Before the Islands were fully pacified, a far-sighted policy was adopted, and Daniel H. Burnham was called upon to lay out a comprehensive scheme for the city of Manila, and about 1905 the so-called "Burnham plan" was established by law. Shortly afterwards the office of consulting architect was developed to take charge of the execution of the plan as well as the program for the government buildings throughout the Islands. The office drew its authority from the governor general and was responsible only to him. William E. Parsons, from Mr. Burnham's office in Chicago, was appointed at a time when the output of designs became of real importance. The impress of his incumbency is left chiefly in his town planning covering many communities, including the summer capitol in the hills at Baguio. J. Corner Fenhagen was later appointed assistant consulting architect, and under him there were produced a number of brilliant designs, and about 1912 he succeeded Mr. Parsons.

The official "Burnham plan" not only called for the capitol building in Manila but had even located its exact position. Mr. Osmania, speaker of the native house and very powerful politically, wished the new building located at Cebu, his home town, on another island. A complete deadlock resulted. At that time the house and senate sat in the old *adjutiamento,* which dated back to the preceding century, and in front of it were the foundations of a government hall, projected by the Spanish rulers. This served as a reminder of the delays of Spanish rule, and the records show that although only the foundations were in place, the expenses for the completed structure were all listed as having been met!

Early in 1915 Mr. Fenhagen went back to the United States, and Ralph Harrington Doane, of Boston, who was serving as assistant, was made the consulting architect. To him an appeal was made by President Queson of the Philippine senate and a leader of equal political power to Osmania. Queson favored the Manila rather than the Cebu site and was eager for the legislative building to be undertaken at once. The Spanish failures were a spur to action. President Queson succeeded in getting the necessary funds voted, and to break the stalemate over location, the consulting architect made the preliminary sketches for a superb library to be erected on the site designated in the "Burnham plan," but a library so designed that it could be used temporarily as the legislative hall. A full set of working drawings was prepared, including 22 plans, elevations and



Insular Capitol Building, Manila
Ralph Harrington Doane, Architect

sections at eighth scale and ten elaborate detail sheets at three-quarter scale; estimates were obtained, and early in 1918 Mr. Doane signed the contract for the foundations just before he returned to America to enter the army. After his departure four Philippinos were appointed as assistant consulting architects, dividing up the work which had formerly been handled by the one American chief, and to Juan Arellano was assigned the execution of the new capitol building. Mr. Mandelbaum, an American and the head draftsman under Mr. Doane, remained.

The plan of the capitol is like a figure eight, containing two large courtyards. The bar across the middle, which separates the two courtyards, contains at the present time the house of representatives and the senate chamber. It is intended that these two great halls will be used as the principal reading rooms when the structure is converted into a public library. The entire rear portion of the building was designed as a fireproof shell without any heavy reinforced concrete construction on the interior from basement to roof, and this void is temporarily filled in with second class construction providing offices for the senators, representatives and clerical staff. Eventually these wooden cells will be removed and the entire space filled in with tier on tier of book stacks.

By comparing the original working drawings, made ten years ago, with the illustrations of the building at the time of its formal opening last winter, reproduced on these pages, some changes made under the direction of Arellano may be noted. An attic story has been added over the principal order, doing away with the pediment over the main entrance. The simple gable end of the high central mass of the building containing the reading rooms has been elaborated into a formal classical pediment filled with sculpture. The size of the basement windows has been increased, and the main flight of stairs which led up to the portico of the principal entrance has been replaced by an inclined driveway, a concession to the fact that in Manila everyone drives. In the main the capitol is of reinforced concrete veneered on the outside with cast stone where the aggregate is chips of white marble, with the surface bush-hammered. The interior has considerable cast stone.

While Mr. Doane's original design shows no trace of "Spanish influence" and although, at first glance, there appears in it to be slight recognition of the characteristics of tropical climates, nevertheless architectural concessions have been made to meet conditions imposed by the climate. A characteristic of buildings in the Spanish style is that they were either designed with heavy walls, small fenestration, producing dark, cool interiors, or as especially notable in domestic work, that they were built with virtually two exterior walls separated from each other by a gallery permitting circulation around the exterior of the building and creating a shady zone, thus permitting large fenestration without admitting too much sunlight and heat. The capitol building by virtue of full and three-quarter columns has the shady zone about it which has been referred to a characteristic of domestic work. Furthermore, the windows are so designed that they slide into pockets behind the colonnade, so that in clear weather the building may have all the appearance of a pavilion.



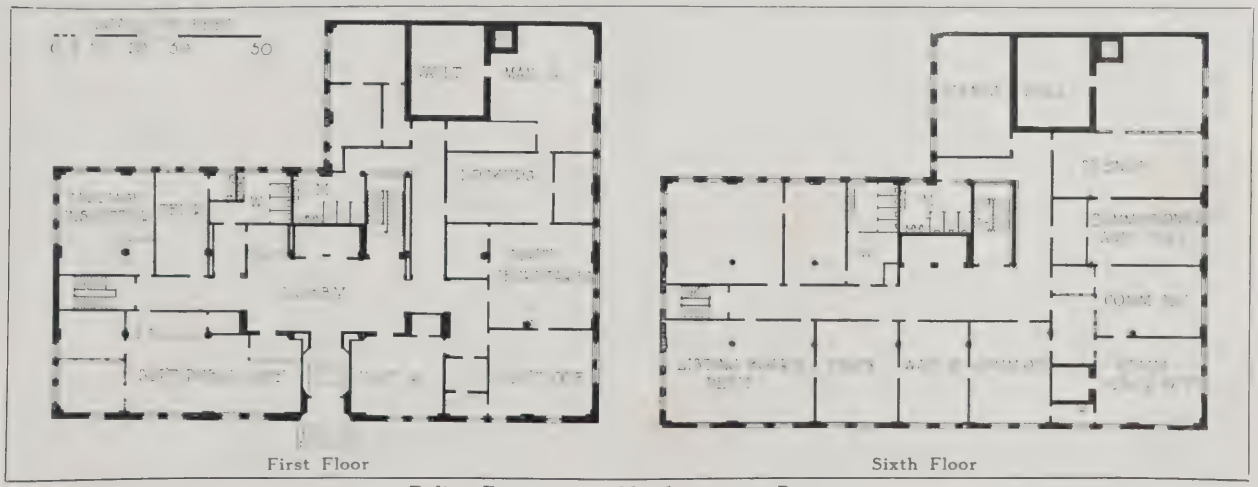
Senate Lobby, Insular Capitol Building, Manila
Ralph Harrington Doane, Architect



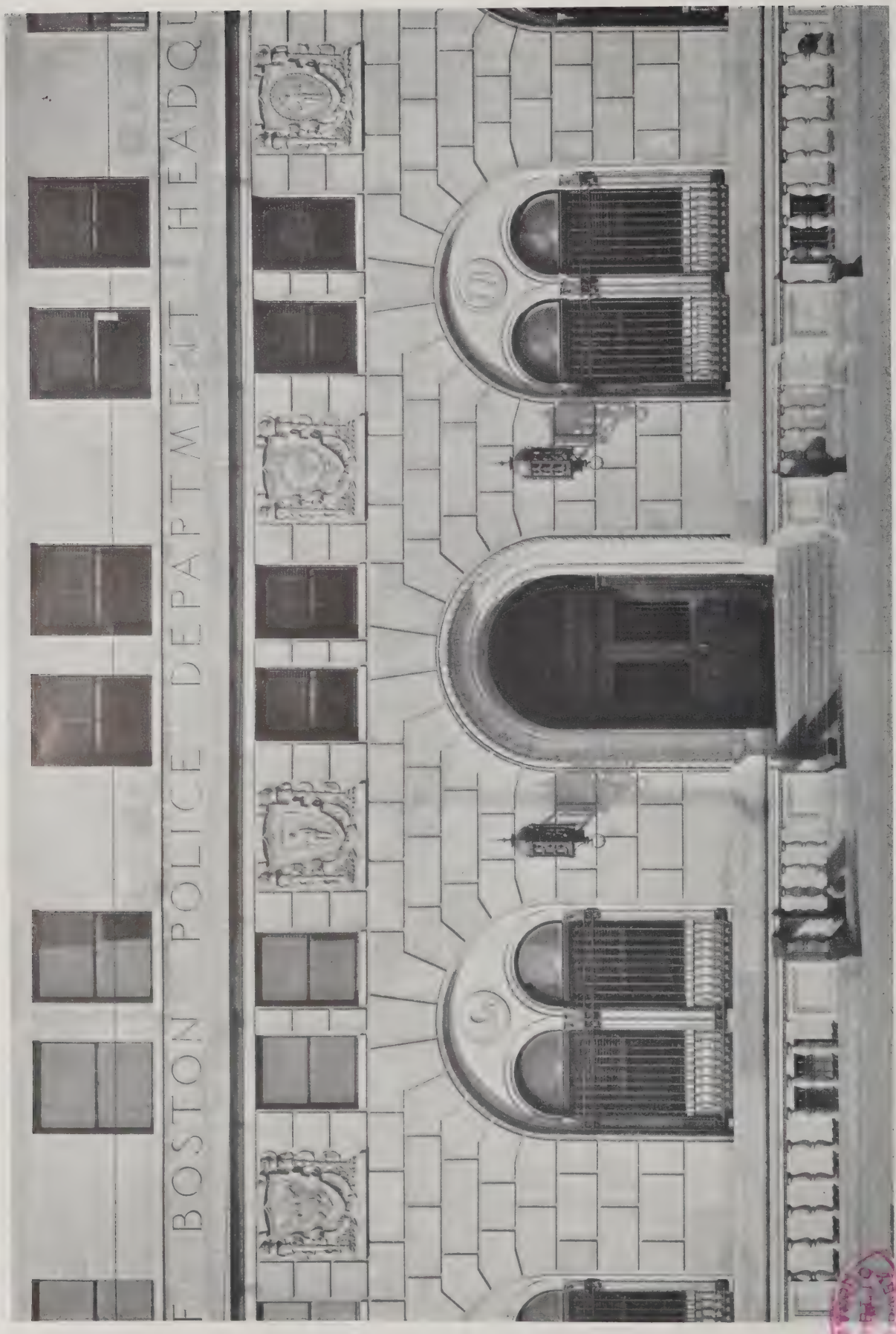
Police Department Headquarters, Boston

RITCHIE, PARSONS & TAYLOR, Architects

THE new Boston Police Department Headquarters building is seven stories in height with basement and sub-basement, and covers nearly the entire area bounded by Berkeley, Stuart, and Stanhope Streets. The exterior is in the Italian Renaissance style, with limestone on the Berkeley and Stuart Street facades and a light colored brick on Stanhope Street and the court. The building houses all of the police departments, including photograph and finger print rooms, automobile inspection, carriage inspection, superintendents, inspectors, homicide, narcotics and liquors, women police, signal service, claim investigation department, police commissioner, listing board, trial board and dormitories.

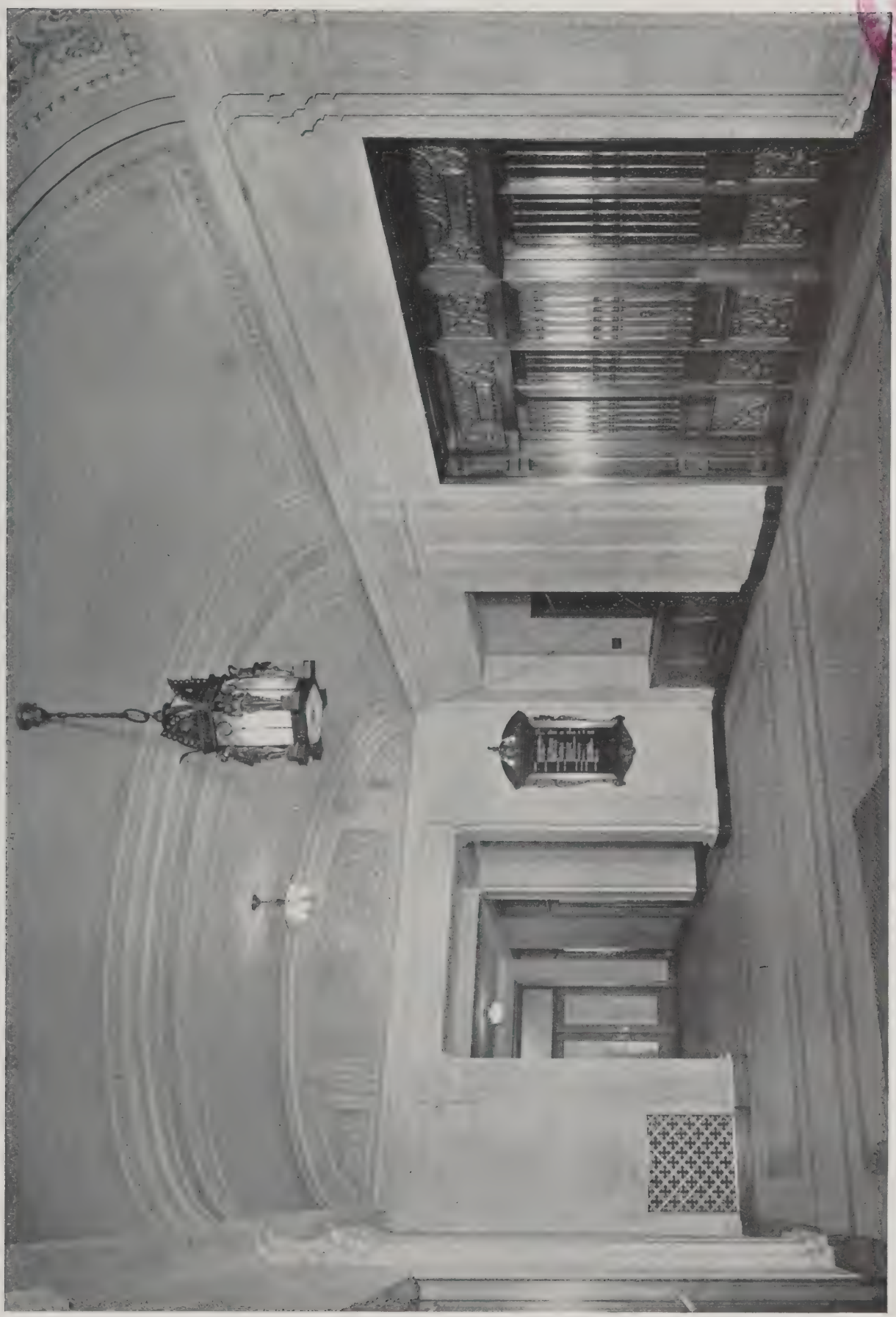


Police Department Headquarters, Boston
Ritchie, Parsons & Taylor, Architects



MAIN ENTRANCE, POLICE DEPARTMENT HEADQUARTERS, BOSTON
RITCHIE, PARSONS & TAYLOR, ARCHITECTS

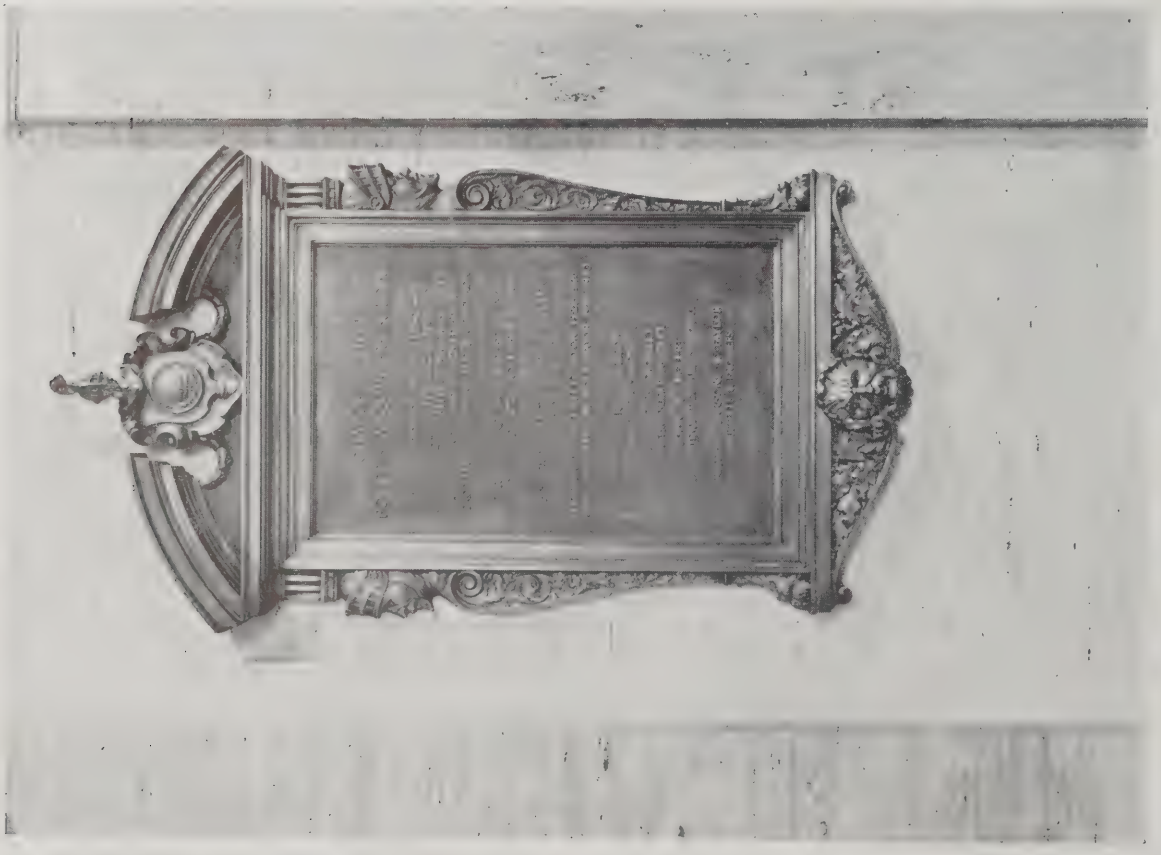
Photos. Paul J. Weber



MAIN LOBBY, POLICE DEPARTMENT HEADQUARTERS, BOSTON
RITCHIE, PARSONS & TAYLOR, ARCHITECTS

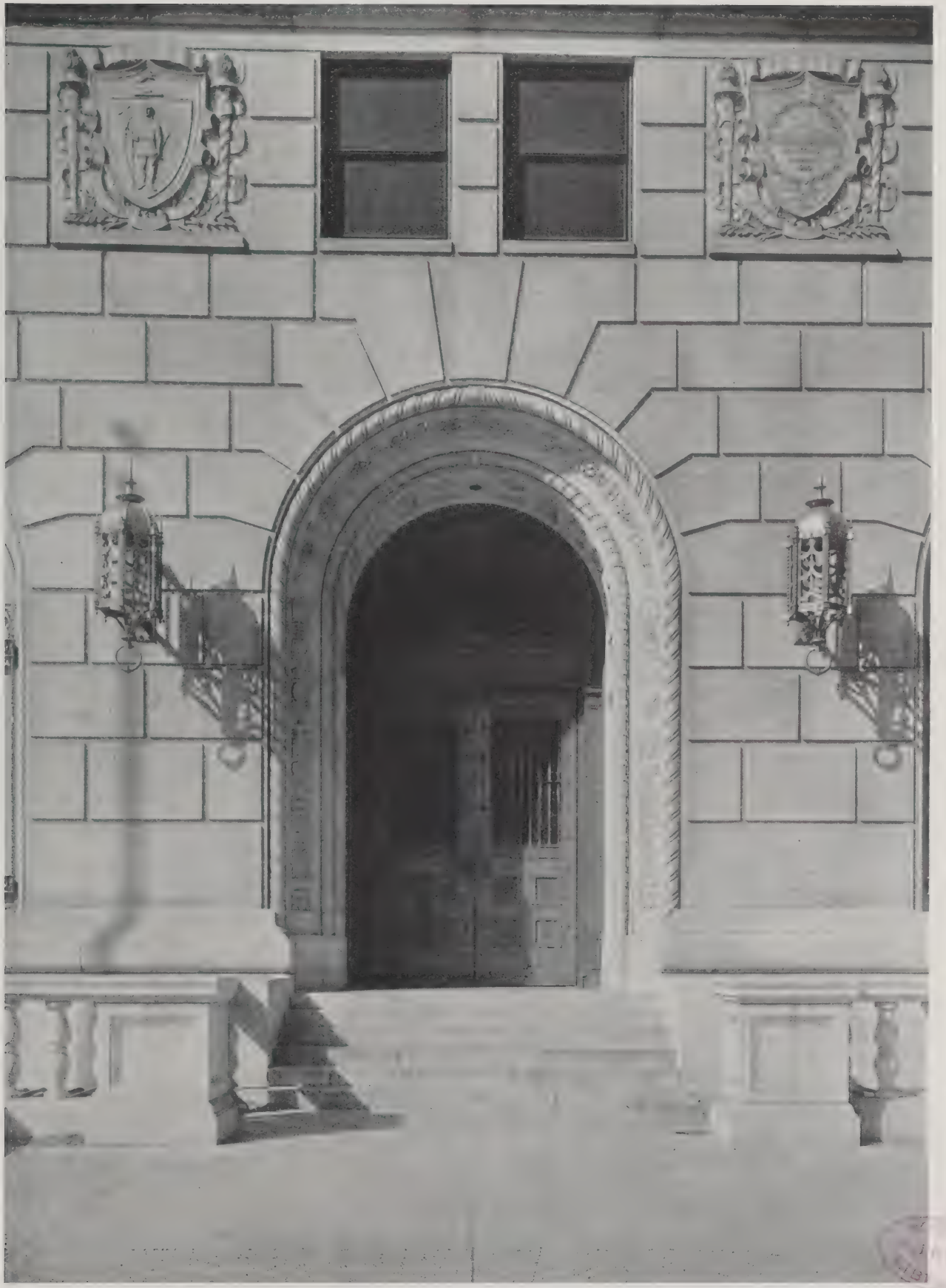


BRONZE FLAGPOLE BASE

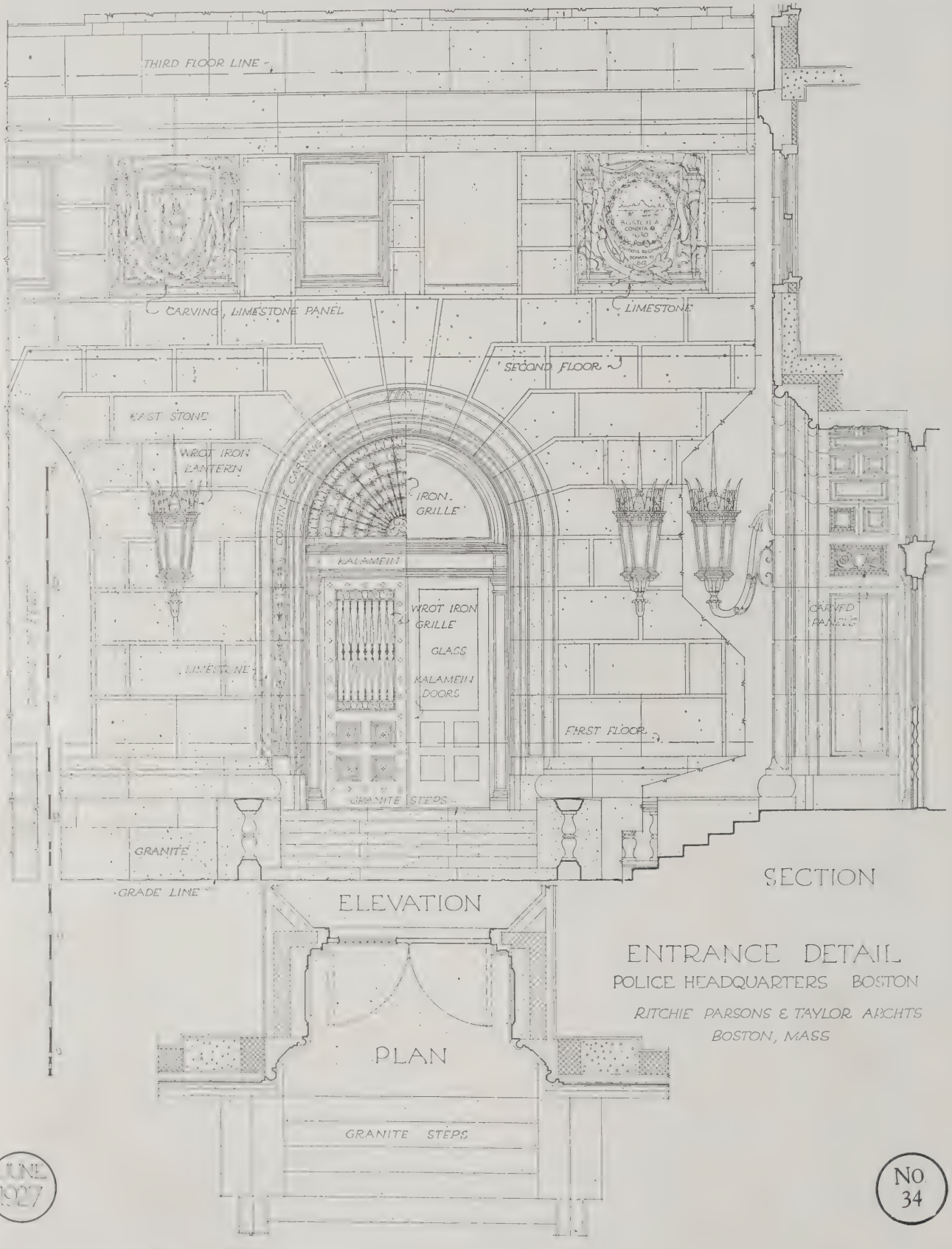


BRONZE DEDICATION TABLET

POLICE DEPARTMENT HEADQUARTERS, BOSTON
RITCHIE, PARSONS & TAYLOR, ARCHITECTS



MAIN ENTRANCE DOORWAY, POLICE DEPARTMENT HEADQUARTERS, BOSTON
RITCHIE, PARSONS & TAYLOR, ARCHITECTS



ENTRANCE DETAIL

POLICE HEADQUARTERS BOSTON

RITCHIE PARSONS & TAYLOR ARCHTS
BOSTON, MASS

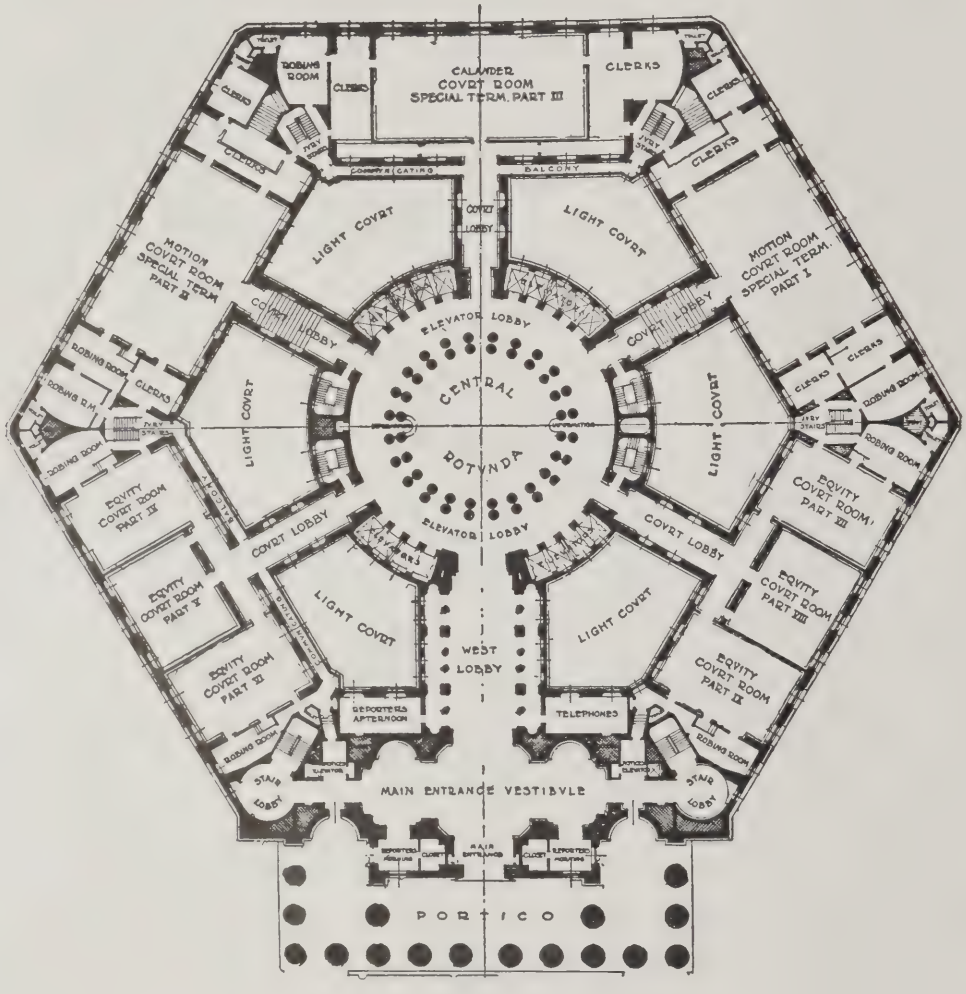
JUNE 1927

No. 34

Plans on Back

NEW YORK COUNTY COURT HOUSE
GUY LOWELL, ARCHITECT

Photo. Wurts Bros.



PLAN, FIRST FLOOR, NEW YORK COUNTY COURT HOUSE

GUY LOWELL, ARCHITECT



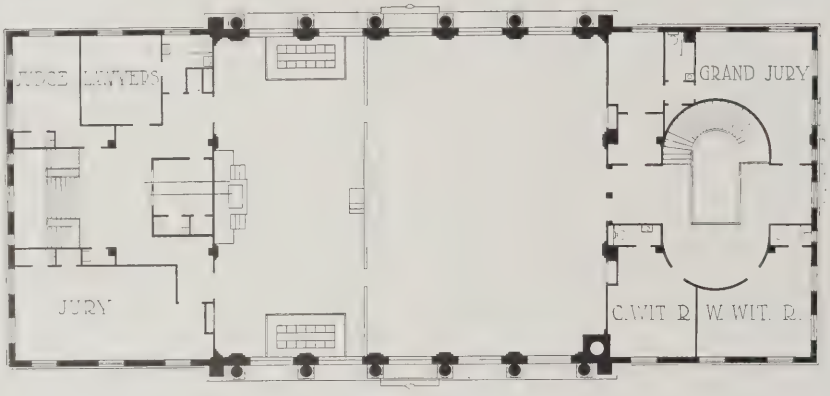
MAIN ELEVATION



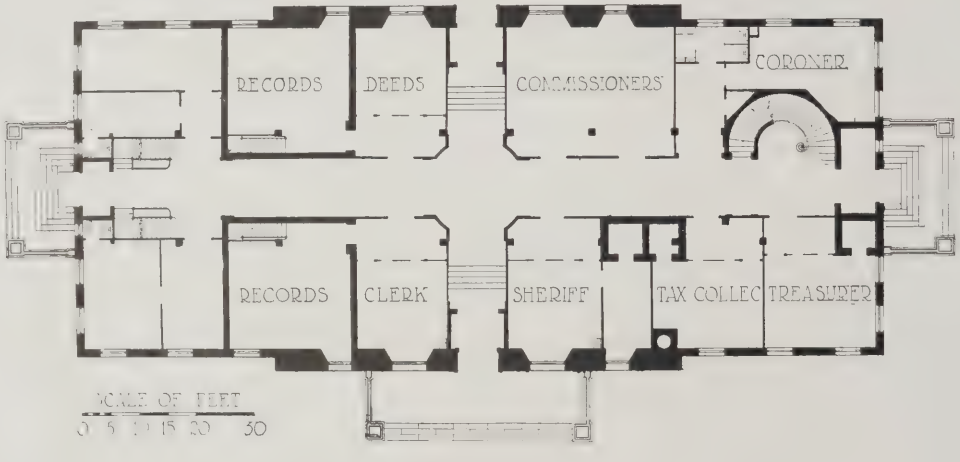
Plans on Back

COURT ROOM, CATAWBA COUNTY COURT HOUSE, NEWTON, N. C.

WILLARD ROGERS, ARCHITECT



SECOND FLOOR



FIRST FLOOR

PLANS, CATAWBA COUNTY COURT HOUSE, NEWTON, N. C.

WILLARD ROGERS, ARCHITECT



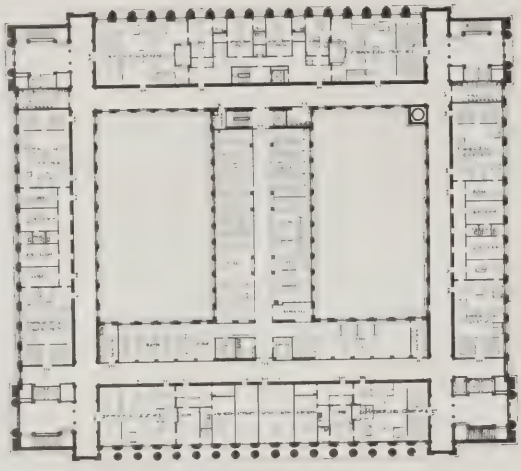
MAIN ELEVATION



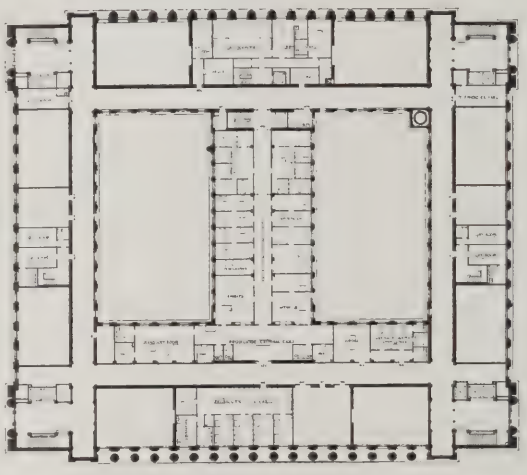
Photos. Charles H. Longley

HAMILTON COUNTY COURT HOUSE, CINCINNATI

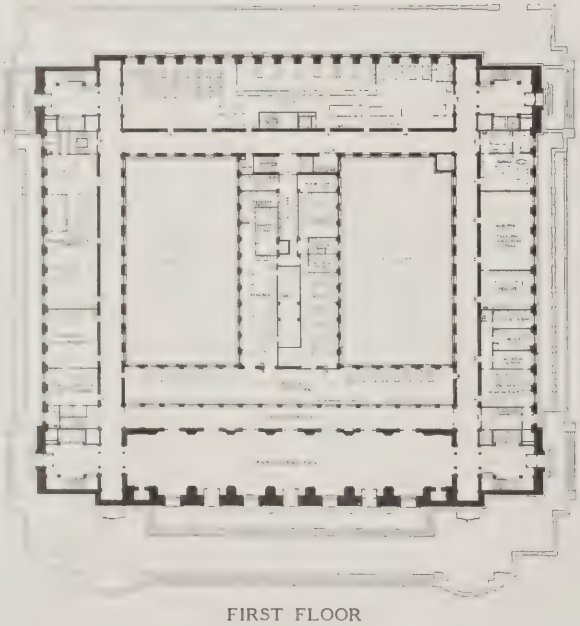
RANKIN, KELLOGG & CRANE, ARCHITECTS



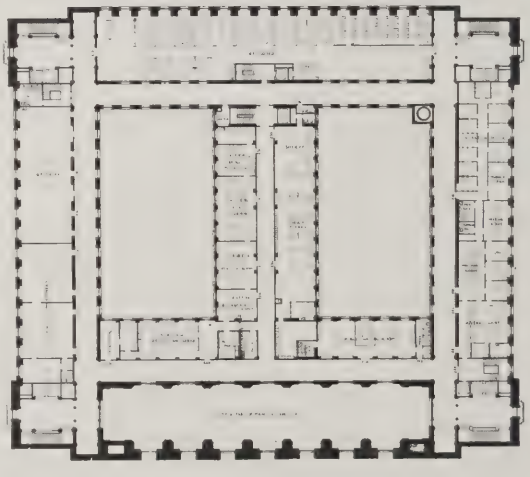
THIRD FLOOR



FOURTH FLOOR



FIRST FLOOR



SECOND FLOOR

PLANS, HAMILTON COUNTY COURT HOUSE, CINCINNATI

RANKIN, KELLOGG & CRANE, ARCHITECTS

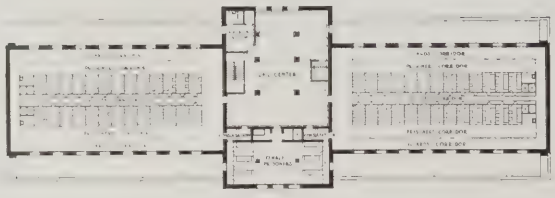


Photo. Tebbs & Knell, Inc.

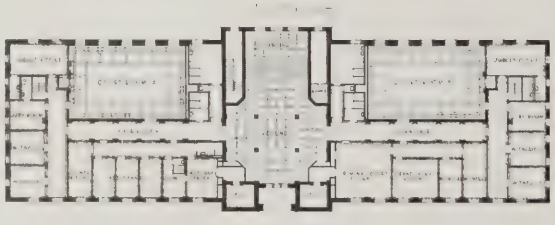
Plans on Back

COURT HOUSE, MEMPHIS

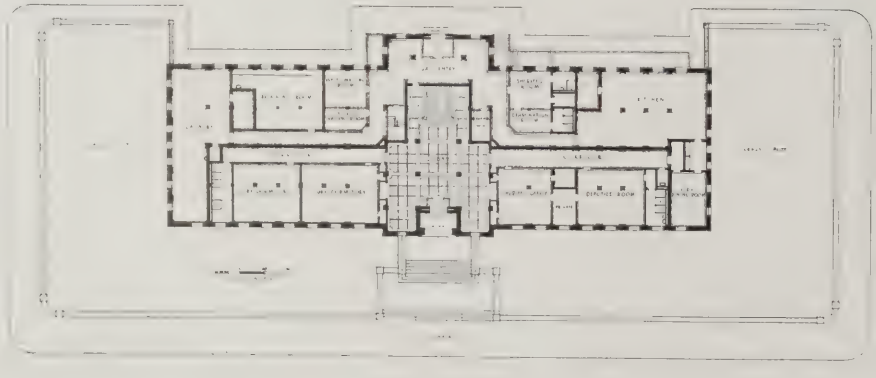
JONES & FURBRINGER, ARCHITECTS



THIRD FLOOR



SECOND FLOOR



FIRST FLOOR

PLANS, COURT HOUSE, MEMPHIS

JONES & FURBRINGER, ARCHITECTS

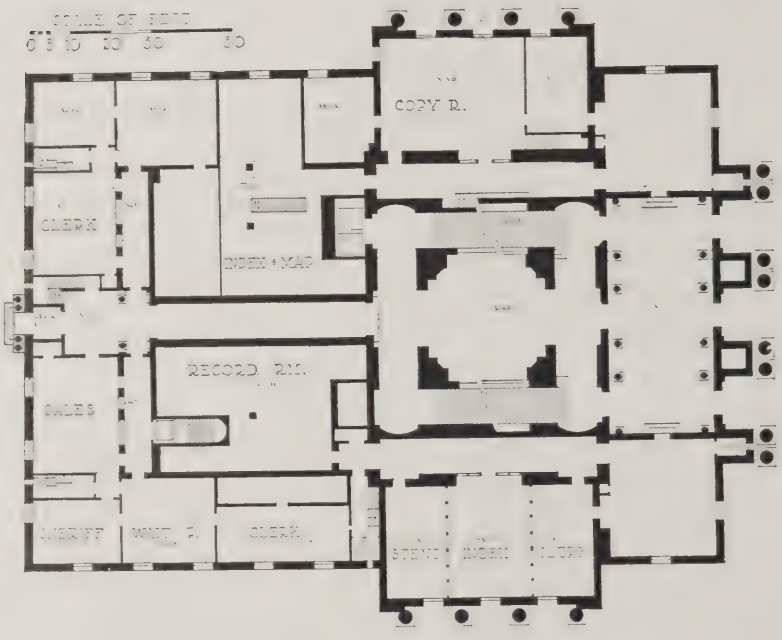


Photo, John Wallace Gillies

Plans on Back

ESSEX COUNTY COURT HOUSE, NEWARK

CASS GILBERT, ARCHITECT



PLANS, FIRST FLOOR, ESSEX COUNTY COURT HOUSE, NEWARK

CASS GILBERT, ARCHITECT



GENERAL VIEW

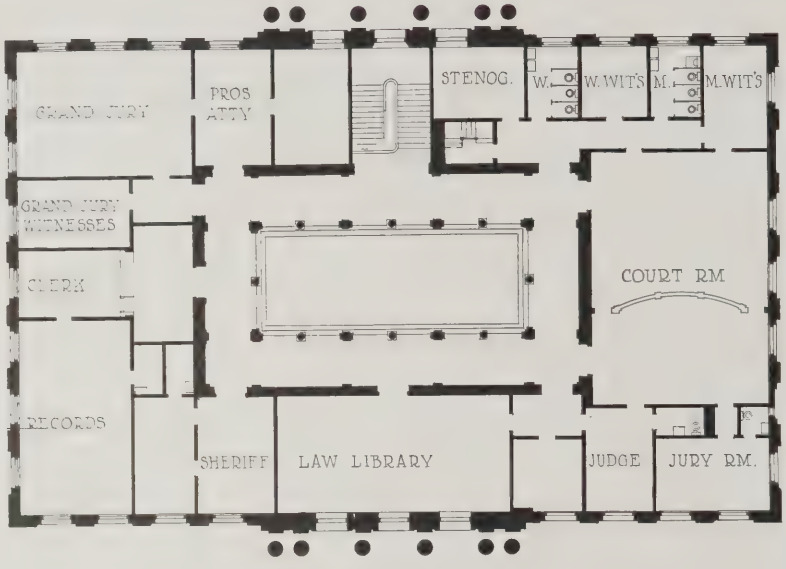


Photos. S. M. John

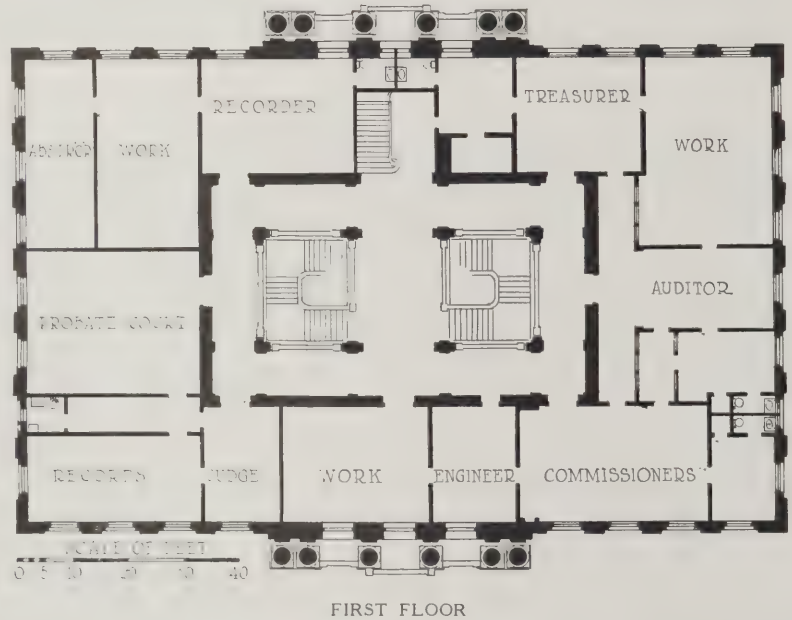
COURT ROOM, HARDIN COUNTY COURT HOUSE, KENTON, O.

RICHARDS, McCARTY & BULFORD, ARCHITECTS

Plates on Back



SECOND FLOOR



FIRST FLOOR

PLANS, HARDIN COUNTY COURT HOUSE, KENTON, O.

RICHARDS, McCARTY & BULFORD, ARCHITECTS

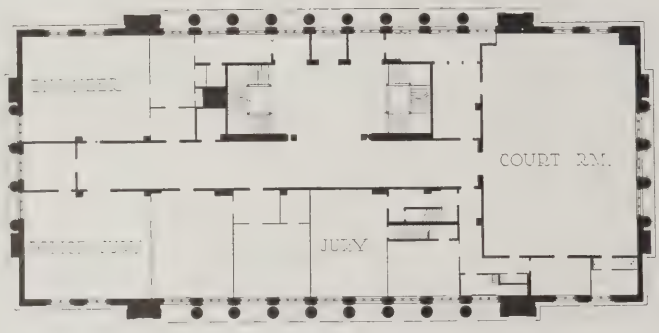


Photo. Griffin Studio

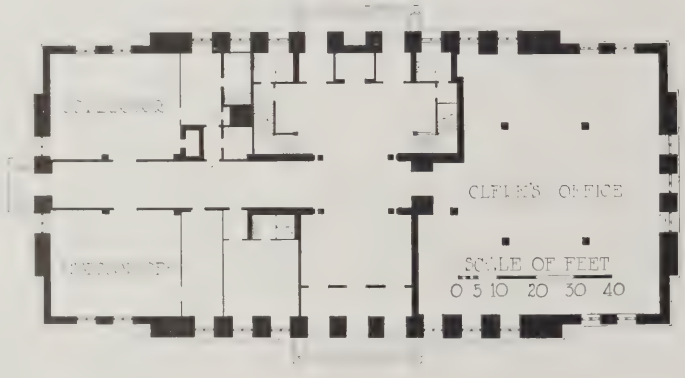
Plans on Back

OUACHITA PARISH COURT HOUSE, MONROE, LA.

J. W. SMITH, H. H. LAND, AND D. CURTIS SMITH, ARCHITECTS



SECOND FLOOR



FIRST FLOOR

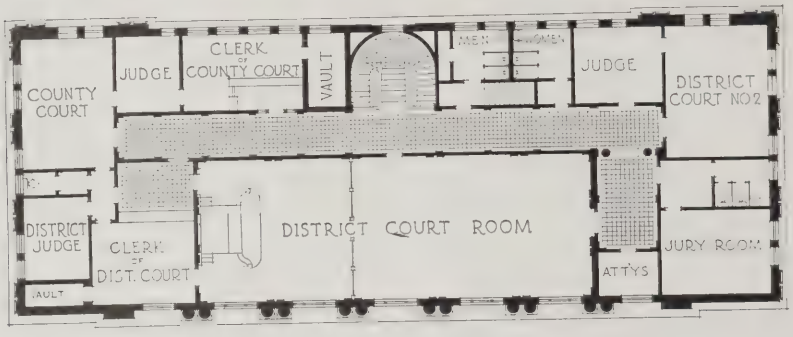
PLANS, OUACHITA PARISH COURT HOUSE, MONROE, LA.

J. W. SMITH, H. H. LAND, AND D. CURTIS SMITH, ARCHITECTS

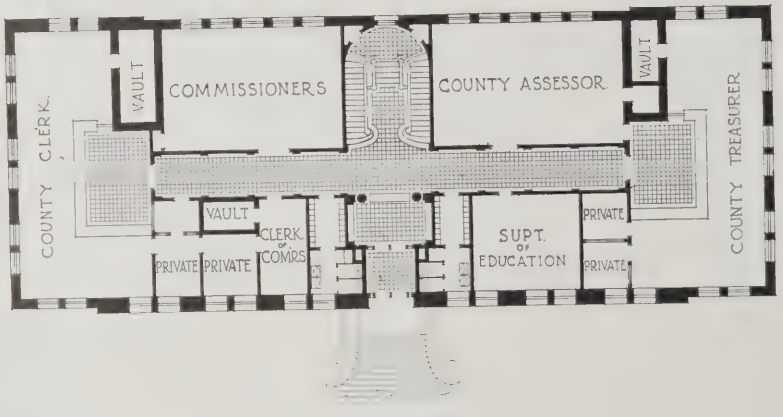


MESA COUNTY COURT HOUSE, GRAND JUNCTION, COLO.
EUGENE G. GROVES, ARCHITECT

Plans on Back



SECOND FLOOR



FIRST FLOOR

PLANS, MESA COUNTY COURT HOUSE, GRAND JUNCTION, COLO.

EUGENE G. GROVES, ARCHITECT

City and Town Halls

By CHARLES G. LORING

TOWN government in America antedated government state or federal, and the precedents for housing the offices of such local governments are logical in plan and indigenous in character. The very conservatism of our smaller communities has embodied itself consistently in their town halls, and although there are a few survivals of Victorian Gothic and Richardsonian Romanesque and a few revivals of the gay nineties and the *cinquicento,* the work of the semi-professional architects of the northern colonies has held its own. Possibly it is to be regretted that for the sake of variety, if not for the sake of art, there is so little expression through architecture of the modern phases of our complex life such as the Farmer-Labor Party, Greenwich Village, the Single Tax Enclaves, Herrin, Ill., and Hollywood, Cal., all phases well to the fore.

In the south, where the first organization was by parishes and not by townships, and where the form of government was based on an aristocracy of wealthy slave owners rather than on a democratic commonwealth, the building of town halls was negligible. The old state capitols, city halls and court houses are interesting and full of inspiration, with many characteristics adaptable to town halls. In the extreme southwestern states, which were settled under Spanish influence, there were a few municipal buildings, such as the Alamo in San Antonio, which might be included as legitimate precedents. In California, however, the early rule was so directly ecclesiastical, and till the middle of the last century the population was so scattered and its civic construction so primitive, that it is only during this present century that such buildings of small proportions have been successfully designed anywhere in California.

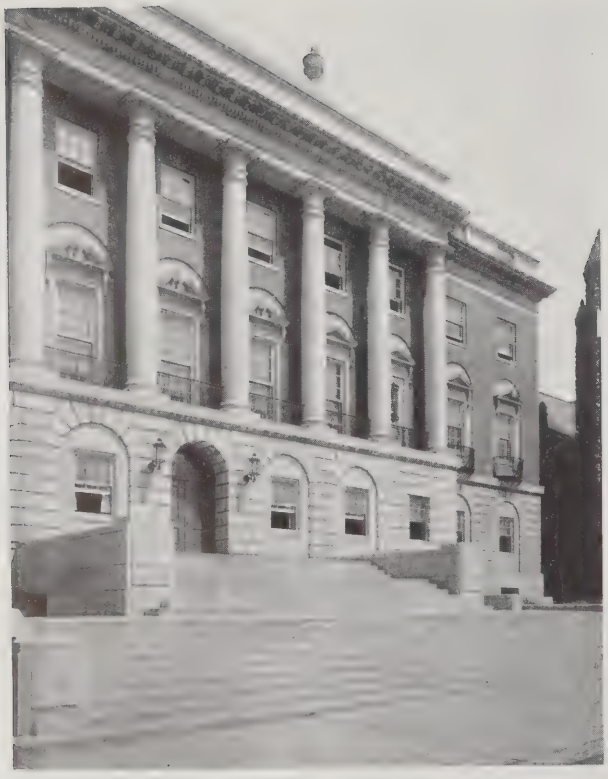
City halls may rejoice in towers and colonnades, expand into gigantic office buildings and ignore past precedents, but town halls maintain the even tenor of their ways both in the form of architecture and in its structural expression. Three examples are outstanding: Independence Hall in Philadelphia (ascribed by many to Andrew Hamilton, who served on the building committee), with its brick clock tower and copper roof; the "Town House," built in 1713 in Boston, and now known as the "Old State House," also of red brick and in plan excellently disposed about a circular stairway; and the City Hall in New York, designed by John McComb in 1803 (when the population was hardly 79,000) and faced with stone, in detail having a French flavor, whereas



Fire Station and Town Hall, Milburn, N. J.
Horatio W. Olcott, Architect



Town Hall, Littleton, Colo.
J. B. Benedict, Architect



Municipal Building, White Plains, N. Y.
Joseph H. Freedlander, Architect

the two older buildings show rather a British influence. Dissimilar they are in plan, silhouette, material and derivation, yet their vivid expression of the political ideals and practices of the founders of the republic links them into one broad style. And that style today is cogent and germane. Some of the town halls which tell the sound and sturdy story of the republic are less well known, not on account of architectural deficiencies but because of out-of-the-way settings. The neo-Grec building at Salem, Mass., constructed in 1838, is a "dated specimen," typical of the last phase of our architecture before the beginning of the dark ages of art which shrouded the middle of the nineteenth century. Its granite facade is a stern example of the Greek revival type of architecture, and its type is re-echoed in John Russell Pope's hall at Plattsburg. The "Hall" at New Castle, Del., built about 1750, with its two-story wings, open cupola and white facade, is a staunch model, being successfully followed to this day.

The essentials of modern town hall planning are encompassed in a simple frame. Because the hall is for a town, it presupposes that the administrative functions are simple and compact and that land values are not excessive; so the building may be only a few stories in height with open grass plots about it. The problems of circulation and lighting are simplified almost to zero. Where the building in addition to the offices contains an auditorium for the gath-



Photo. Tebbs & Knell, Inc.

Municipal Building, Plainfield, N. J.
Laurence F. Peck and William L. Bottomley, Associated, Architects

erings of the townspeople, there is a conflict between these two types of public use, with peak loads at different hours,—a conflict between at least two kinds of elements, unrelated in their sizes and functions, which must be reconciled on the facades. Where the fire engine house is incorporated in the building or the street front is rented out for stores, or where a ticket office for the movies must be grafted on the main entrance, the problem in design is sublimated out of the confines of a brief survey. In the township with scant population which has outgrown a couple of rooms over the dry goods store, between the dentist and the attorney, the new public office building must be kept small. The first cost and the upkeep are measured in terms of price-per-bushel or mill-hand-wage, and the demands on the architect's ingenuity are in inverse ratio to his fee. The charming miniature designed by Lewis E. Welsh at Greenfield, N. Y. is the blue ribbon example of the pocket edition. It is a striking example of the small town hall.

Of particular importance is the grouping of the body politic on all-day duty around one center where it can work behind a rail and act as proxy for half a dozen elective but part-time officials. Incidentally, this rail or counter can be put to great advantage if it is made a good 40 inches high for the public's convenience in writing, and if it is covered with brass-bound linoleum and has the entire inner side a nest of stock metal drawers for filing. Here the records



View of Auditorium
Robbins Memorial Town Hall



Photo. George E. Lawrence Co.

Robbins Memorial Town Hall, Arlington, Mass.
R. Clipston Sturgis, Architect



Municipal Court and Public Safety Building, Des Moines
Vorse, Kraetsch & Kraetsch; Keffer & Jones; Sawyer & Watrous, Associated, Architects

of births and of dog taxes, of water mains and fire permits are all in order and close at hand. The grouping of departments also simplifies the concentration into one fireproof safe of important documents, which of course must be properly protected.

In one town hall serving a population of almost city size, the departments were coördinated, with all the financial offices on the first floor, on one side of



City Hall, Charlotte, N. C.
C. C. Hook, Architect



Municipal Building, Teaneck, N. J.
Ludlow & Peabody, Architects

the main entrance, including the treasurer, collector, auditor and assessor. From them a private stairway led directly to the large fireproof storeroom in the basement which supplemented the smaller vaults in the offices. On the other side of the lobby were the street, water, engineering and building departments, with a common drafting room and special filing shelves for blueprints. These two groups were placed



City Hall, Burlington, Iowa
W. F. Weibly, Architect



Photo. Peter A. Juley & Son

CITY HALL AND MEMORIAL MONUMENT, PLATTSBURG, N. Y.

JOHN RUSSELL POPE, ARCHITECT



MUNICIPAL GROUP, SPRINGFIELD, MASS.
PELL & CORBETT, ARCHITECTS

on the ground floor because they were most frequently used by the public. On the second floor were the council chamber, the clerk's room, divided by a counter into public and private spaces, and the two rooms for the town manager and the offices less often consulted by the townsfolk and more deserving of privacy and quiet. In the well lighted basement were the bureau of weights and measures and the office of the board of health with its small clinic and large waiting room, and both departments had convenient access to the street through a side door. In addition to the telephone central, the boiler plant and janitor's room, there was a comfort station with an outside entrance for men and an inside entrance for women. Usually the school board office is located in the high school building, and that of the chief of police next the lockup. They prefer the feeling of independence, and it simplifies the town hall janitor service at night. Exceptional conditions are the only justification for allowing space for such organizations as the library, the chamber of commerce, veteran societies and the Red Cross. In one town a strong drive was made to include in the basement a restaurant, which could be used once in a while as an adjunct to community gatherings in the auditorium and six days a week as a meeting place for those interested in the town's affairs. It is almost to be regretted that this extreme case of non-governmental function was not adopted; would it have become a center for serious minded clerks or for the town's scheming politicians?



Town Hall, Lebanon, N. H.
Designed by Jens Fredrick Larson

An auditorium, if there is one, or the council chamber, if it is of sufficient size, may be hired by the citizens for more general purposes. Space for legislation is used comparatively few times during the year, and if an entrance is so planned that the hall may be cut off from the rest of the building, it can serve the taxpayers for lectures, dances, and meetings, and become a definite source of income. An auditorium should be equipped with a thoroughly fireproof motion picture booth, not only for entertainment but also for projecting information to be discussed at meetings. Unless the lot is sloping and so allows easy access on two levels, the sensible practice is to place the auditorium on the main floor, both for the convenience and for the safety of large gatherings. As basement rooms are not desirable and offices above a hall are not easily arranged, the auditorium has often been developed naturally as a one-story rear wing. The auditorium on the second floor of the main building gives to the exterior a more monumental mass and involves less foundation and roof surface, and so it is sometimes adopted.

There is a great opportunity to make the town house interesting from the historical point of view. No place can be more appropriate for relics and records of the town's past,—not alone the formal bronze tablets or stained glass windows, but rather the incorporation in the public lobby of some handsome old doorway, taken from a house erected in the early days, or a quaint tavern sign, if there are colonial traditions, or Indian relics and the primitive utensils of the "frontier era." The corridor walls may be made a museum and hung with early prints and old photographs showing the neighborhood in bygone days; the first railroad, Main Street before the boom and such like "transmittenda" proclaiming civic growth. The treatment of the exterior lends itself to the use of many of the larger conventional elements of decoration in an expressive manner. The cupola connotes the bell calling the voters to exercise their privilege of franchise or warning them of conflagrations; the second story balcony visualizes the town fathers haranguing the citizens. Corporate seals or state and municipal coats of arms (if translated with due regard to the long-established canons of heraldry) become appropriate and beautiful points of design, always adding distinguished dignity.

Two modern halls in the grand manner are the Robbins Memorial Town Hall at Arlington, Mass., by R. Clipston Sturgis, and the Municipal Building in Plainfield, N. J., by Laurence F. Peck and William L. Bottomley. The first is designed in stone and recalls, though it does not copy, the City Hall in New York; the second, of brick with massive stone trim, is Georgian with a dusting of Piranesi. The first contains a town hall used for "representative" town meetings, for, large as it is, it could not contain all the voters; the second is a city hall and so needs no auditorium, but in general size and in the number of offices it might serve for a large town.



Photo. Paul J. Weber.

Plans on Back

TOWN HALL, LEBANON, N. H.

DESIGNED BY JENS FREDRICK LARSON, WHILE A MEMBER OF THE FIRM OF LARSON & WELLS



FIRST FLOOR

PLANS, TOWN HALL, LEBANON, N. H.

DESIGNED BY JENS FREDRICK LARSON, WHILE A MEMBER OF THE FIRM OF LARSON & WELLS



Photo. Samuel H. Gottscho

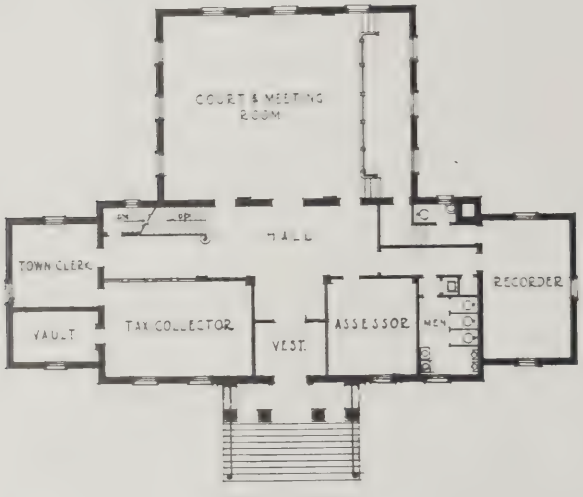
Plans on Back

MUNICIPAL BUILDING, TEANECK, N. J.

LUDLOW & PEABODY, ARCHITECTS



SECOND FLOOR



FIRST FLOOR



BASEMENT

PLANS, MUNICIPAL BUILDING, TEANECK, N. J.

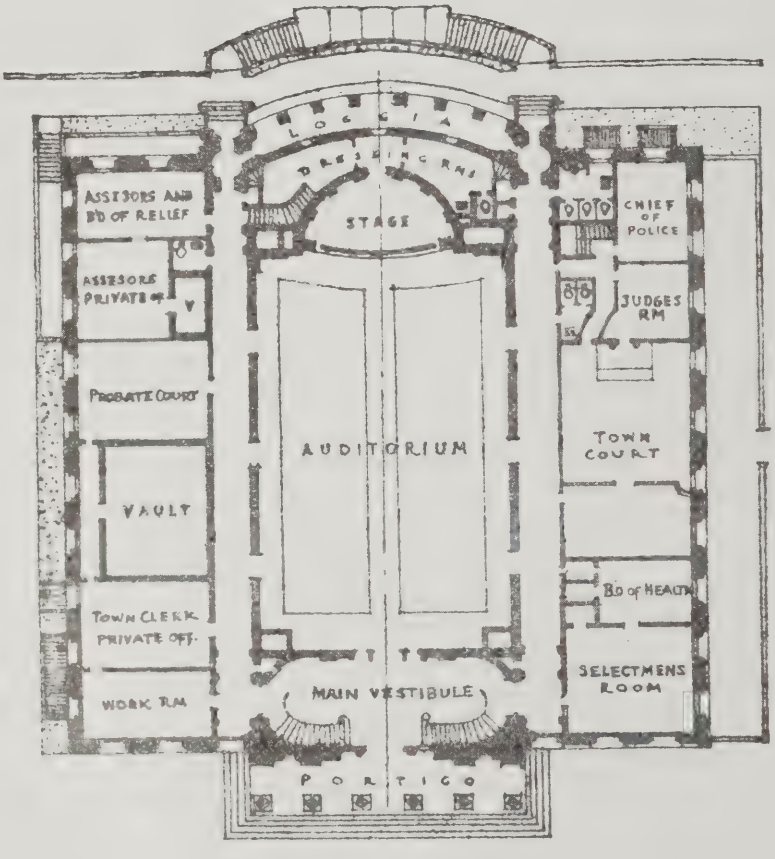
LUDLOW & PEABODY, ARCHITECTS



Photo. De W. C. Ward

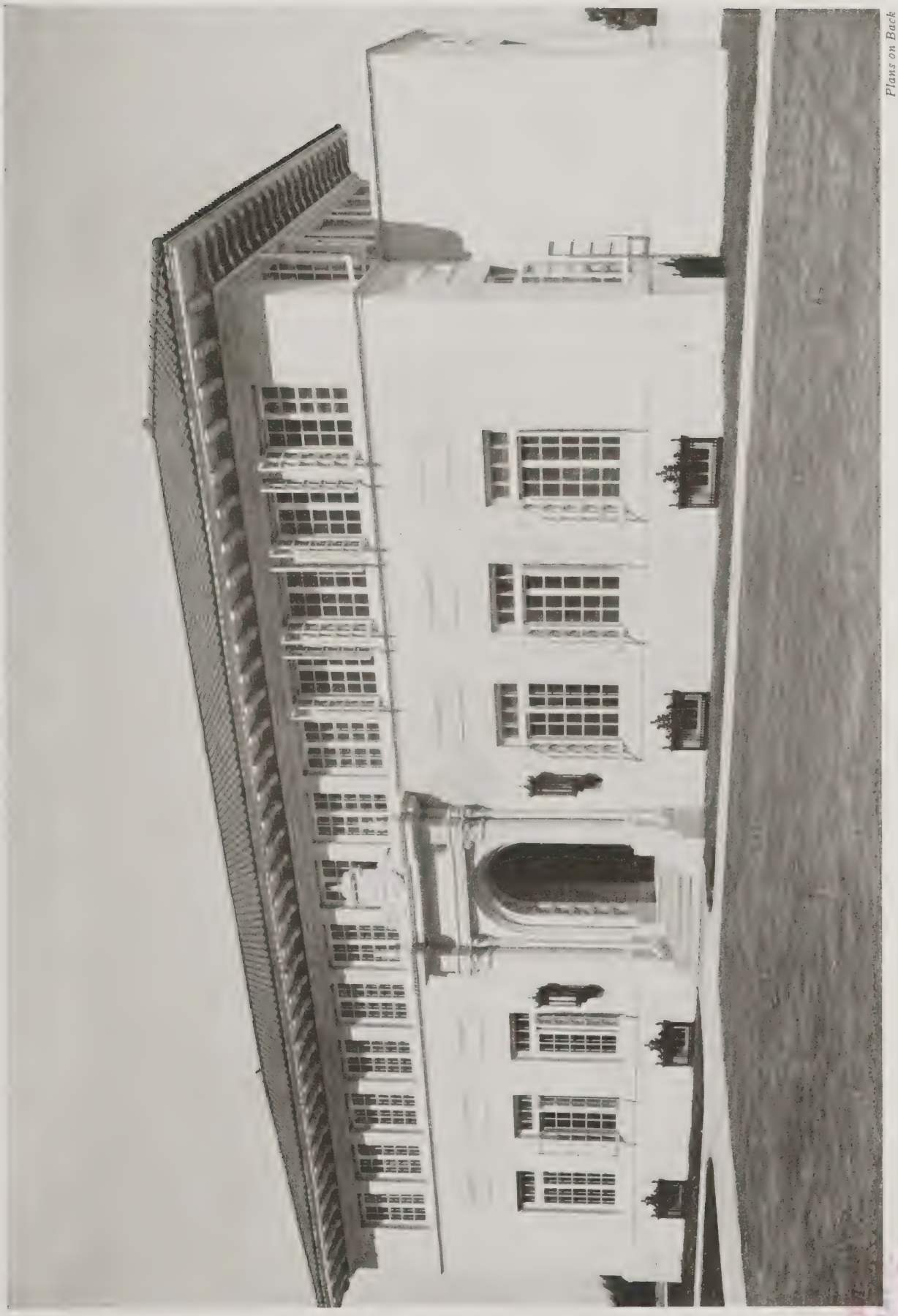
Plans on Back

TOWN HALL, MILFORD, CONN.
EGERTON SWARTWOUT, ARCHITECT



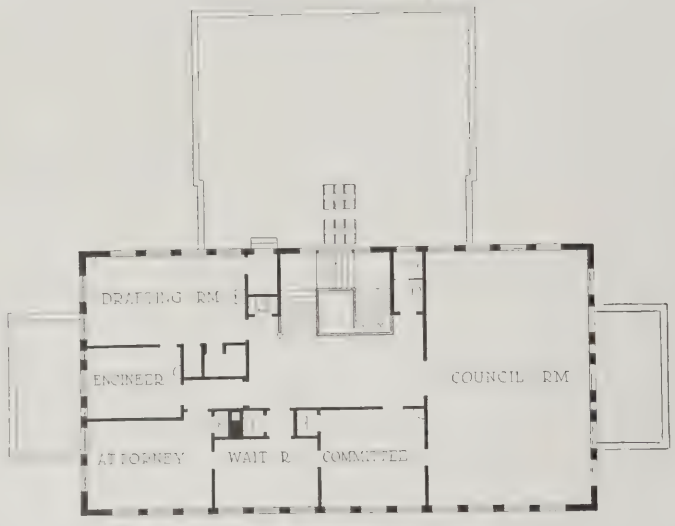
PLANS, GROUND FLOOR, TOWN HALL, MILFORD, CONN.

EGERTON SWARTWOUT, ARCHITECT

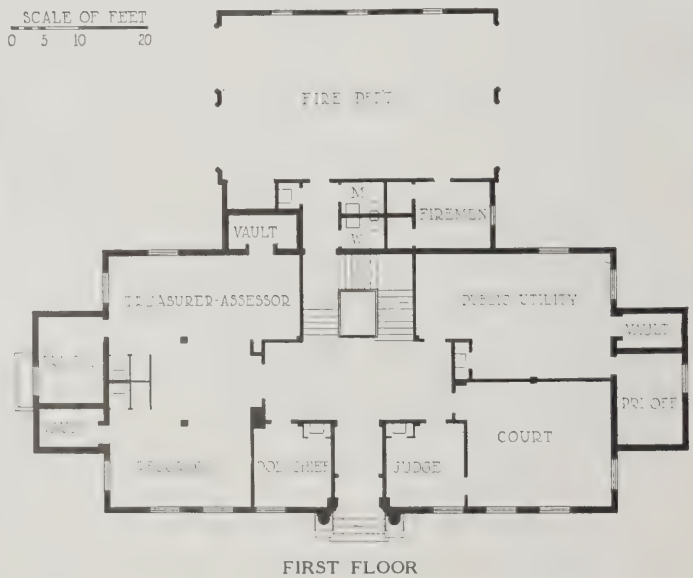


Plans on Back

CITY HALL, YUMA, ARIZ.
LYMAN & PLACE, ARCHITECTS



SECOND FLOOR



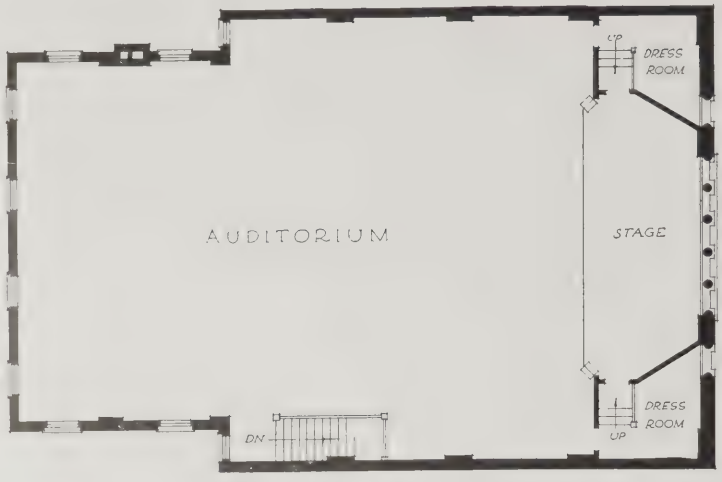
FIRST FLOOR

PLANS, CITY HALL, YUMA, ARIZ.

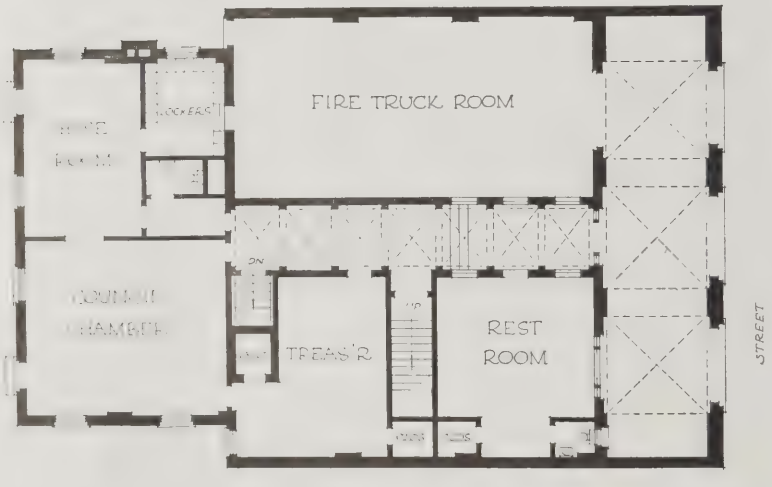
LYMAN & PLACE, ARCHITECTS

Plans and Detail on Back

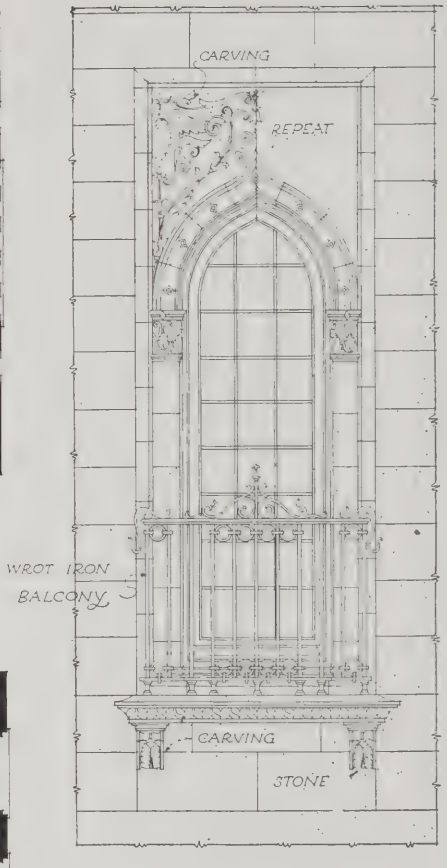
TOWN HALL, LITTLETON, COLO.
J. B. BENEDICT, ARCHITECT



SECOND FLOOR PLAN



FIRST FLOOR PLAN



DETAIL OF WINDOW
Second Story

PLANS AND DETAIL OF TOWN HALL

J. B. BENEDICT ARCHITECT
DENVER, COLORADO

JUNE 1927

NO. 31

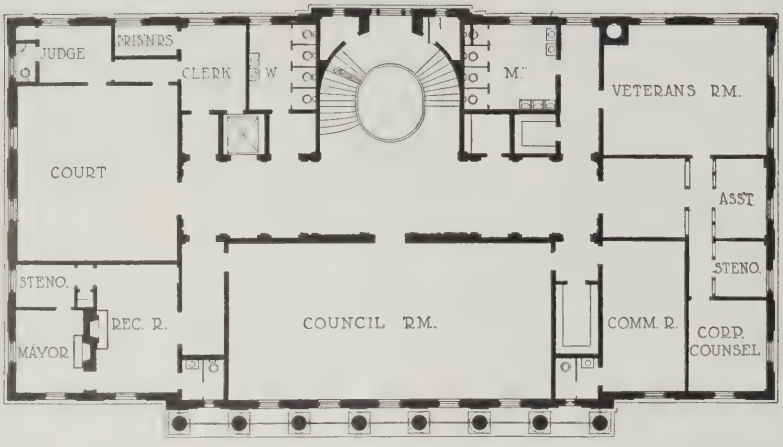


Photo. Wurts Bros.

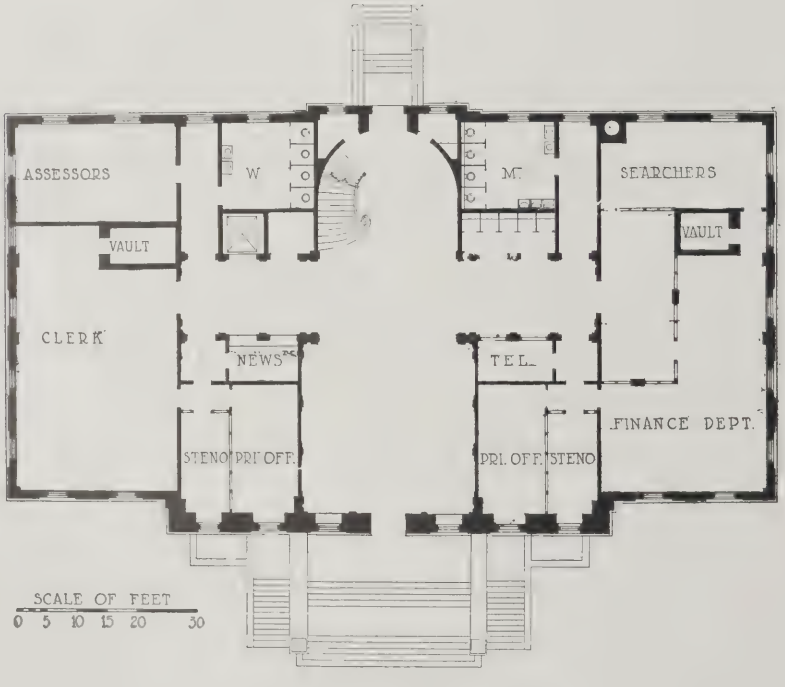
Plans on Back

MUNICIPAL BUILDING, WHITE PLAINS, N. Y.

JOSEPH H. FREEDLANDER, ARCHITECT



SECOND FLOOR



FIRST FLOOR

PLANS, MUNICIPAL BUILDING, WHITE PLAINS, N. Y.

JOSEPH H. FREEDLANDER, ARCHITECT



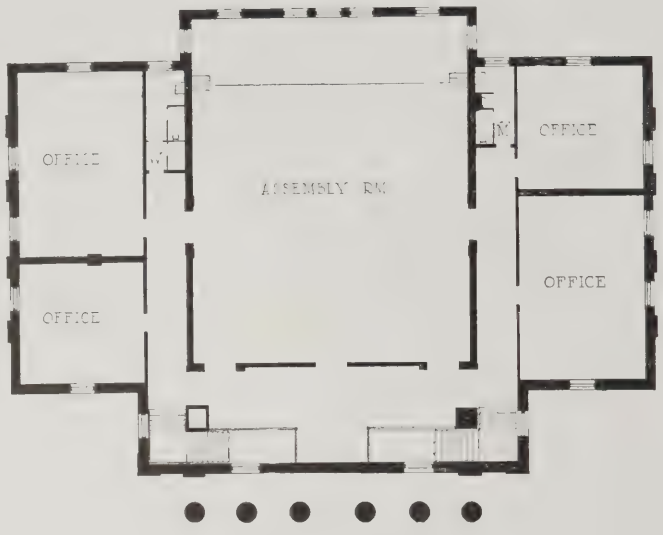
CITY HALL, PLATTSBURG, N. Y.



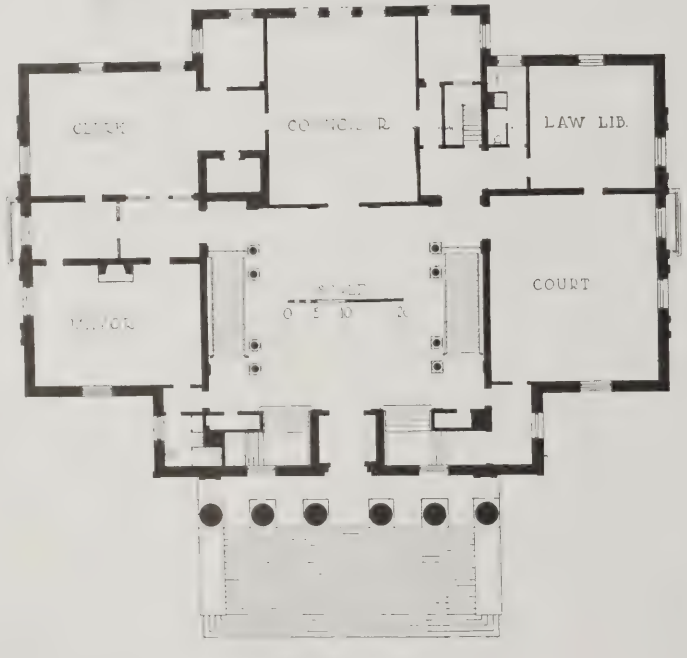
Photos, John Wallace Gillies

Plans on Back

DETAIL, CITY HALL, PLATTSBURG, N. Y.
JOHN RUSSELL POPE, ARCHITECT



SECOND FLOOR



FIRST FLOOR

PLANS, CITY HALL, PLATTSBURG, N. Y.

JOHN RUSSELL POPE, ARCHITECT

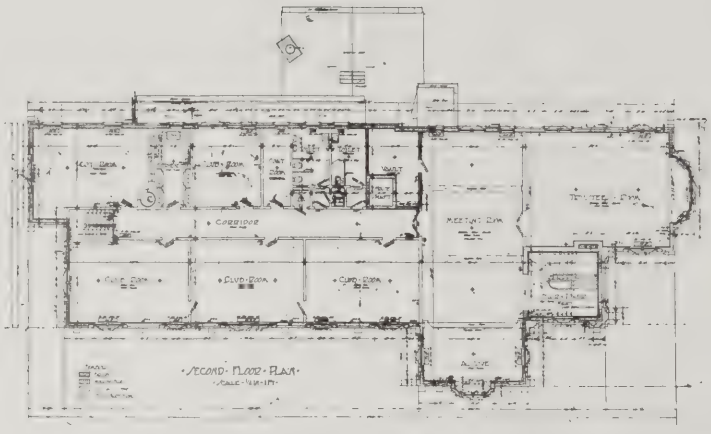


Photo. George H. Van Anda

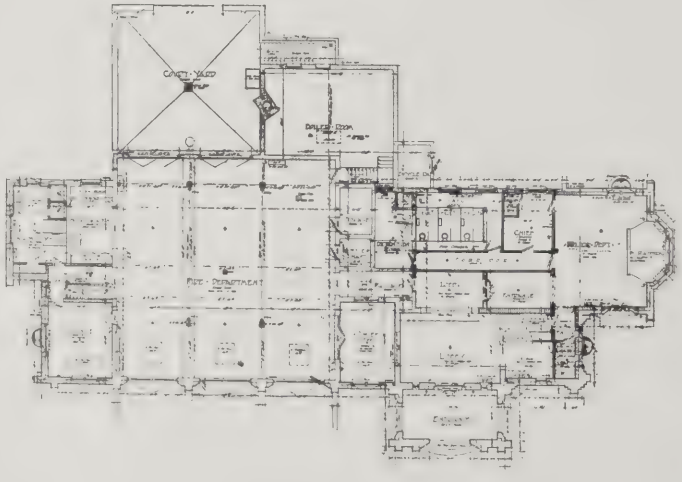
Plans on Back

FIRE HOUSE AND TOWN HALL, LARCHMONT, N. Y.

FRANK MOORE, ARCHITECT



SECOND FLOOR



GROUND FLOOR

PLANS, FIRE HOUSE AND TOWN HALL, LARCHMONT, N. Y.

FRANK MOORE, ARCHITECT

Fire House and Auditorium, Larchmont, N. Y.

CHARLES F. MINK, Architect; OTTO R. EGGERS, Associated

WHEN the Town Board of Larchmont found that new quarters for its fire department were needed, it was decided to hold a competition for designs for a building to properly accommodate its equipment. In addition to space for the fire department, club quarters for volunteer firemen, including an auditorium, were to be included in the building. The site purchased was most admirable. It is a plot 200 by 250 feet, with streets on three sides. Large trees are on one side and in the background. The front faces Weaver Street, an old road over which Washington marched on to White Plains. The architects who designed and planned the building chose the early American style. Local stone, which was easily obtainable in the vicinity, was used for the exterior walls. The stone varies considerably in color, including gray, orange and browns in its range, and is laid with a warm toned mortar, brought out not quite flush with the stone faces. Windows, doors, trim and cupola are of wood, painted a light cream. The roof is of copper with standing seams, the copper left the natural color to weather with exposure.

As the basement is considerably below grade, the matter of securing light and air was of great importance. To overcome the objection to areas, which would have made dark and dreary rooms, the ground level was gently graded down to the window sills, so that grass is visible from inside. This arrangement has made the basement rooms very pleasant. Bowling alleys, billiard room, club room, boiler and coal rooms are all located on this floor. The main entrance to the auditorium is from the side street through an impressive paneled hall. The fire apparatus room, office, kitchen and firemen's reception rooms are placed around the apparatus room. The second floor contains an auditorium seating about 400 people with a stage at one end. Men's and women's rest rooms adjoin at the rear. Sleeping quarters for firemen are also provided. A feature of the plan arrangement is that the club rooms, auditorium and the fire apparatus room may all be used at one time without interference with one another. Examination of the illustration upon Plate 128 and the floor plans upon the back will show that the building has been designed and arranged with unusual taste and skill. Its restrained and dignified architecture would well entitle the structure to an honored place in even the most distinguished surroundings; the rich color and texture of the stone are well set off by the cream color of the trim; the arrangement of the large windows which light the auditorium is entirely successful, and the cupola or belfry suggests New England architecture at its best. Study of the plans will show the skill with which the building has been arranged to meet rather broad requirements. The wide doors intended for fire apparatus open, as they should, directly into the apparatus room, making passing in and out easy. Since this fire house is served by a volunteer company, the sleeping accommodations usually necessary in a fire station are probably not required, but (entirely apart from the auditorium) the structure contains complete offices, kitchen, etc.



View from Side Street



An Entrance Door

On the Designing of Fire Houses

THROUGH departmental standardization, the designing of the fire house is now a very simple matter, admitting of little variation. There is not even a classification into types, since all the houses are designed to accommodate two pieces of apparatus and their crews or companies. The house designed to accommodate more, like a fire company house being built in Jamaica, N. Y., is exceptional, as it is considered more desirable to have a number of smaller units widely distributed than to have a concentration of apparatus in any one place. Site is a factor also, as land with more than a 50-foot front is often hard to find, and the model plans have been laid out, as a rule, on a basis of 50 feet of frontage.

The standard fire-fighting unit to be accommodated by the newest type of fire house in New York consists of two pieces of apparatus,—an engine and a hook-and-ladder truck, each with its company. The company consists of from 14 to 20 men, of whom not less than half are on duty at any given time of the night or day. Their time, in other words, is "half on and half off," but the dormitory accommodations provide for the full complement of men. In most houses there is also provision for separate quarters for a battalion chief or deputy chief. The dormitory is a perfectly plain room with metal cots in a row, and standard steel lockers. A wash room opens from the dormitory, and in addition to stairs down to the main floor, the old pole for the quick sliding descent of the men is still a part of the standard design, though its location is not always the same.

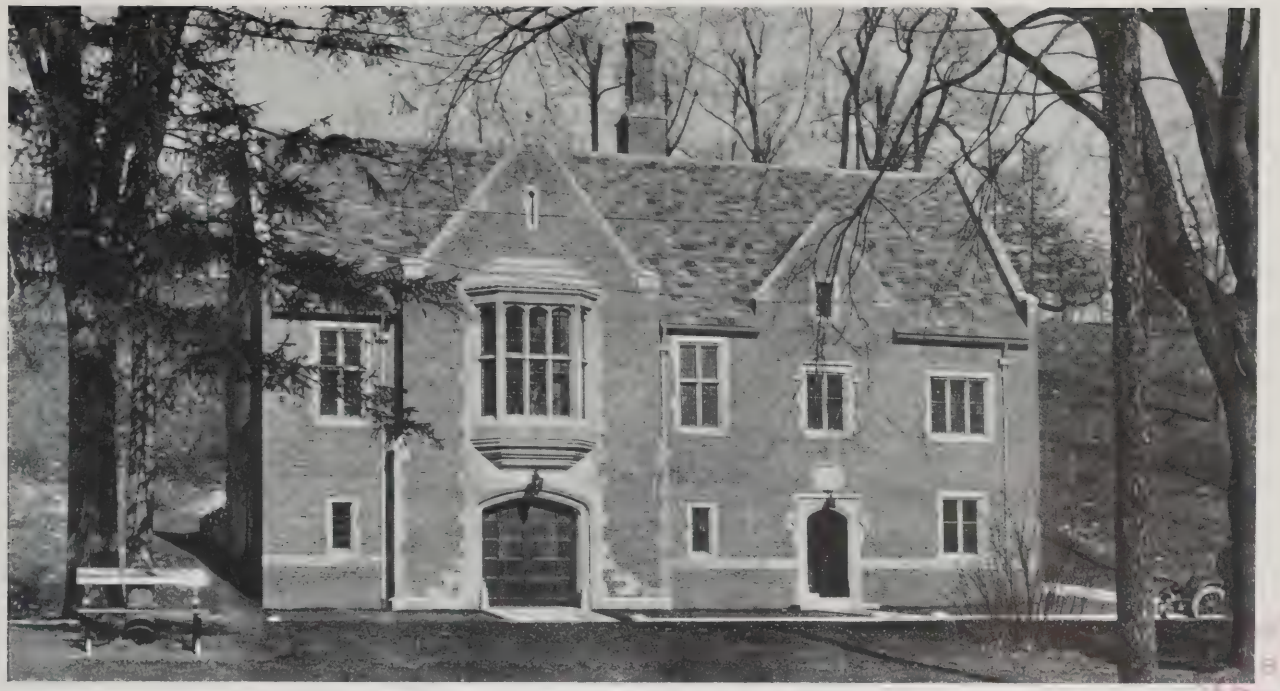
Other than these few governing factors there are no special requirements in the designing of the modern fire house. Its construction is fireproof, and the exterior is generally simply treated in brick and stone, with no expenditure on ornamental effects. In some instances the desirability of relationship to neighboring architecture becomes a factor in the design of the exterior, as in a fire house now being built at Forest Hills Gardens, or in the fire house which is joined to the picturesque half-timbered Y. M. C. A. building lately erected at Westport, Conn.



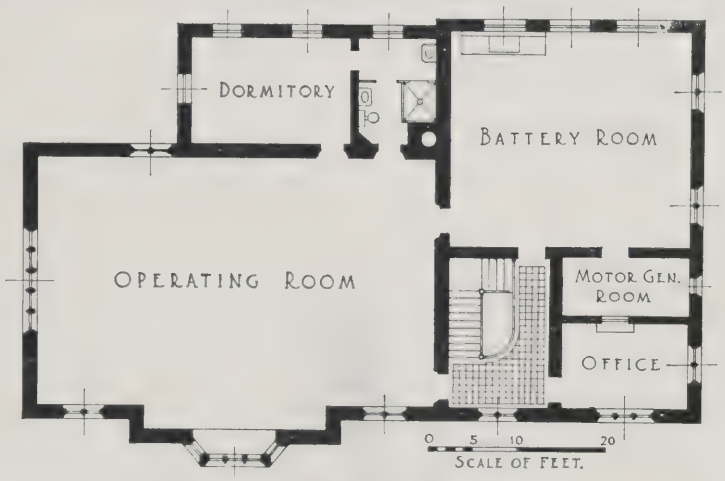
Fire Truck Entrance, Fire Station, Cleveland
Herman Kregelius, Architect



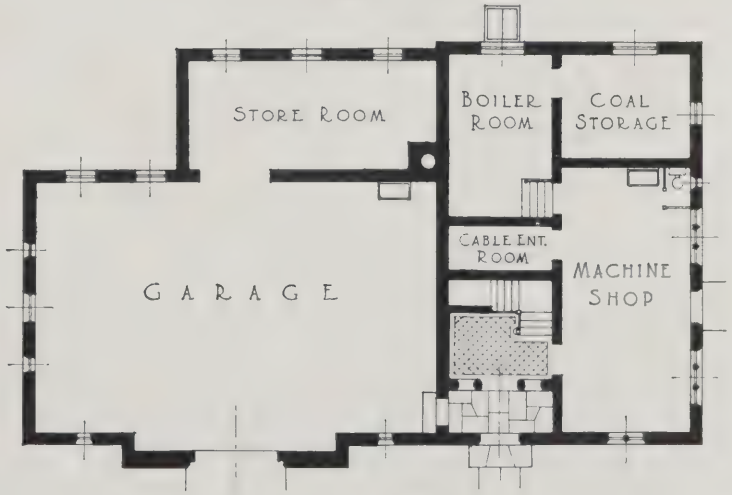
Doorway, Fire Station, Colorado Springs
T. MacLaren, Architect



PERSPECTIVE VIEW



SECOND FLOOR

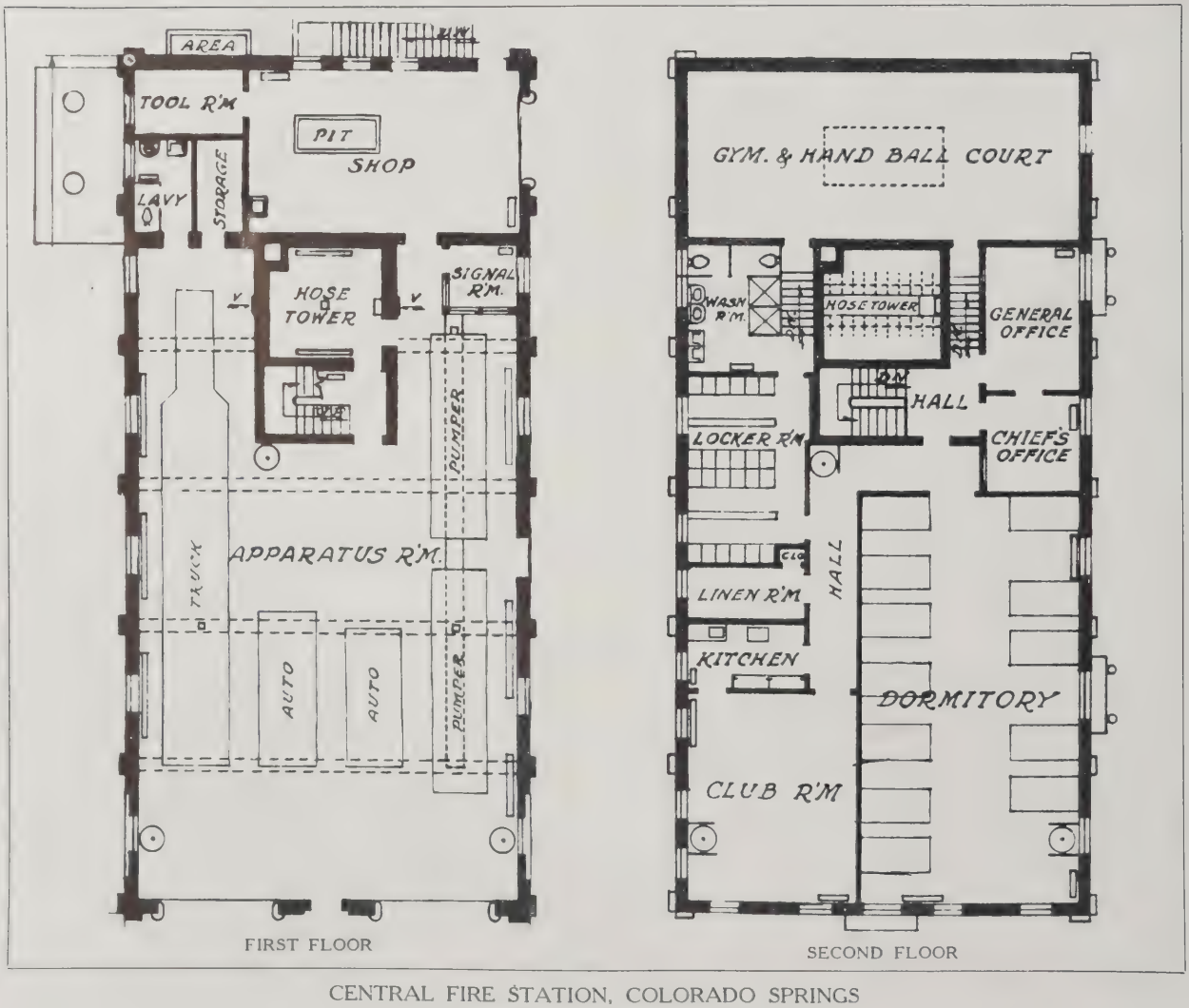


FIRST FLOOR

FIRE ALARM TELEGRAPH STATION, WORCESTER, MASS.
L. W. BRIGGS COMPANY, ARCHITECTS



SOUTHWEST VIEW



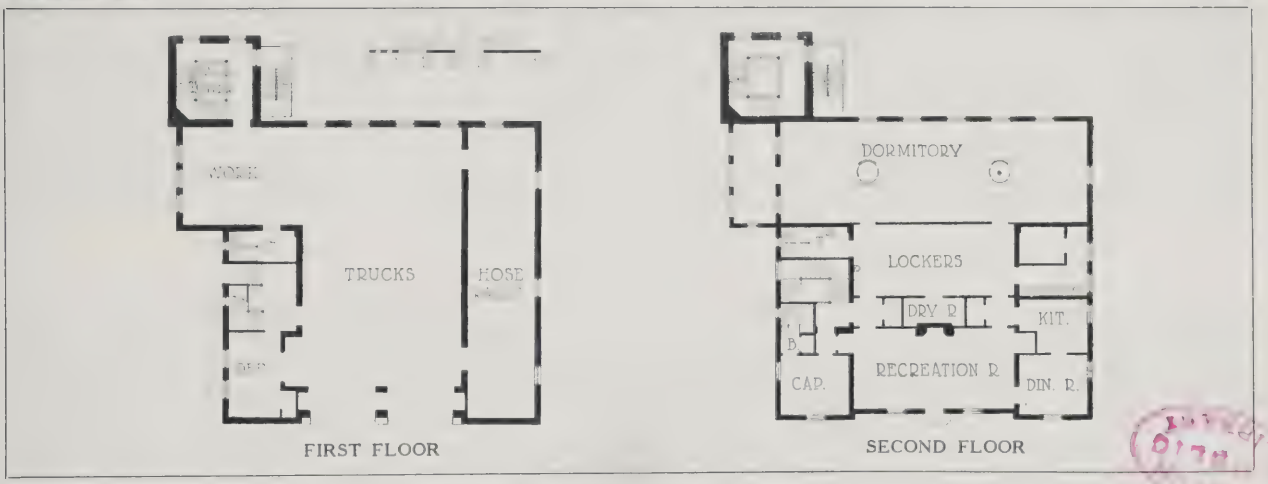
FIRST FLOOR

SECOND FLOOR

CENTRAL FIRE STATION, COLORADO SPRINGS

T. MacLAREN, ARCHITECT





FIRE STATION, ASHEVILLE, N. C.
DOUGLAS D. ELLINGTON, ARCHITECT



Photo. I. T. Frary

FIRE STATION AND SIGNAL HEADQUARTERS, CLEVELAND
HERMAN KREGELIUS, ARCHITECT



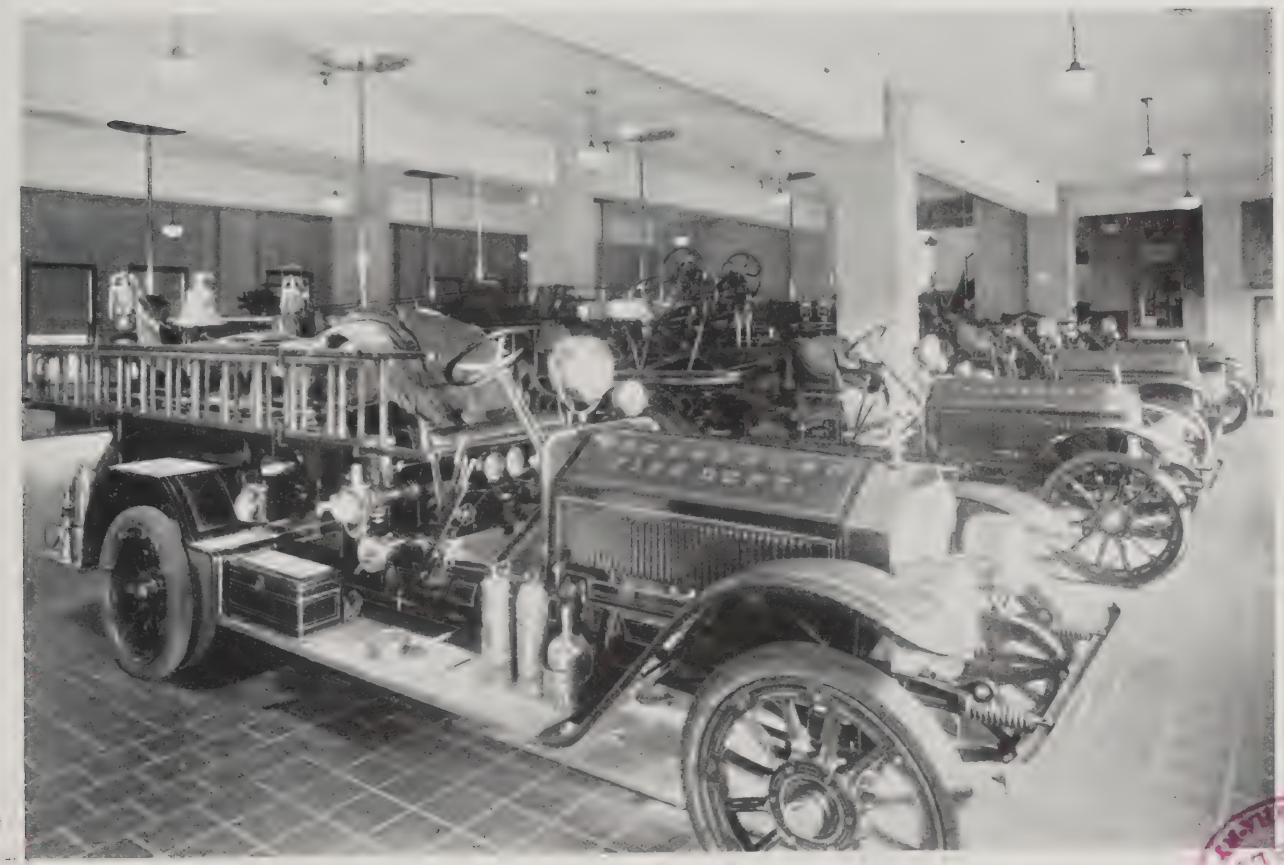
FIRE STATION, BIRMINGHAM, ALA.
O. D. WHILDEN, ARCHITECT



FIRE STATION, DANVERS, MASS.
STEBBINS & WATKINS, ARCHITECTS



FIRE STATION, GREENSBORO, N. C.
CHARLES C. HARTMAN, ARCHITECT

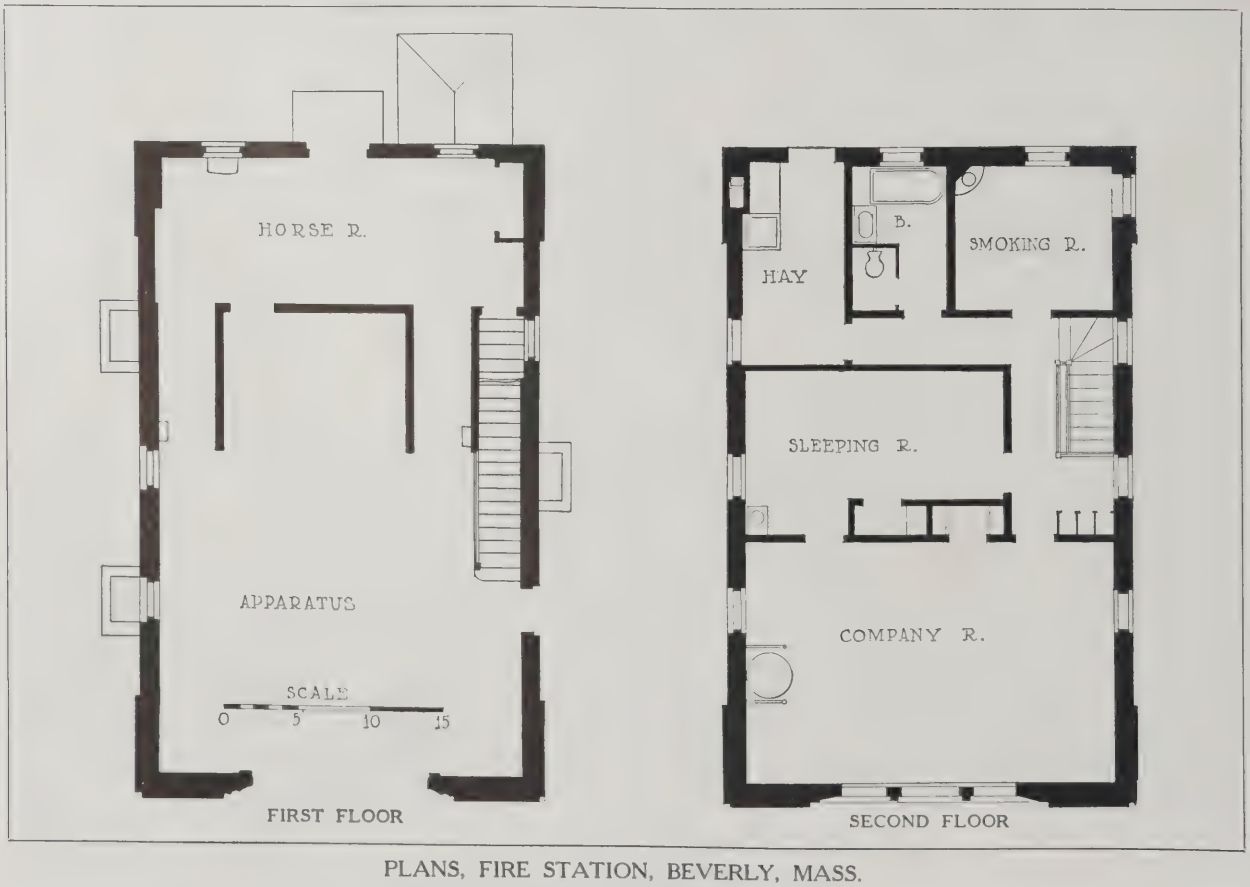


APPARATUS ROOM, FIRE STATION, GREENSBORO, N. C.
CHARLES C. HARTMAN, ARCHITECT



FIRE STATION, BEVERLY, MASS.
KILHAM, HOPKINS & GREELEY, ARCHITECTS

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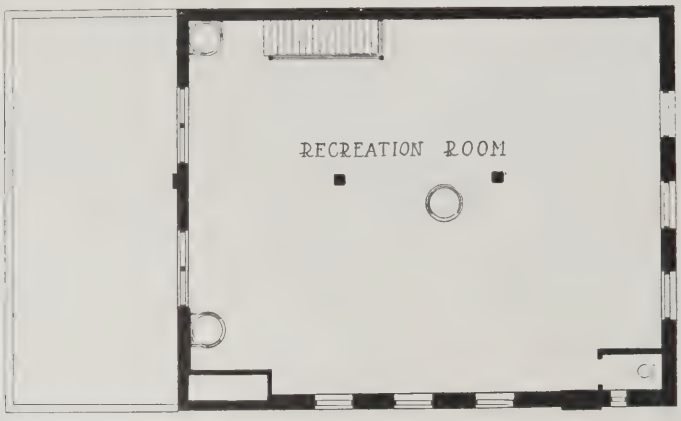
PLANS, FIRE STATION, BEVERLY, MASS.
KILHAM, HOPKINS & GREELEY, ARCHITECTS



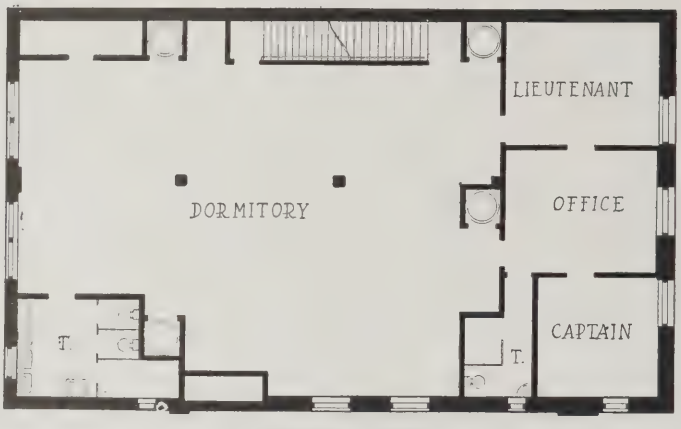
Photo. Drix Duryea

Plans on Back

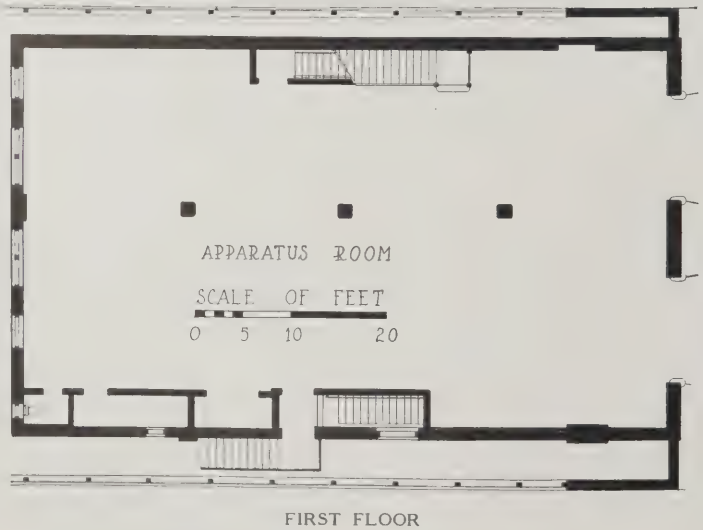
FIRE HOUSE, VERMILYEA AVENUE, NEW YORK
DENNISON & HIRONS, ARCHITECTS



THIRD FLOOR



SECOND FLOOR



FIRST FLOOR

PLANS, FIRE HOUSE, VERMILYEA AVENUE, NEW YORK

DENNISON & HIRONS, ARCHITECTS



MAIN ELEVATION

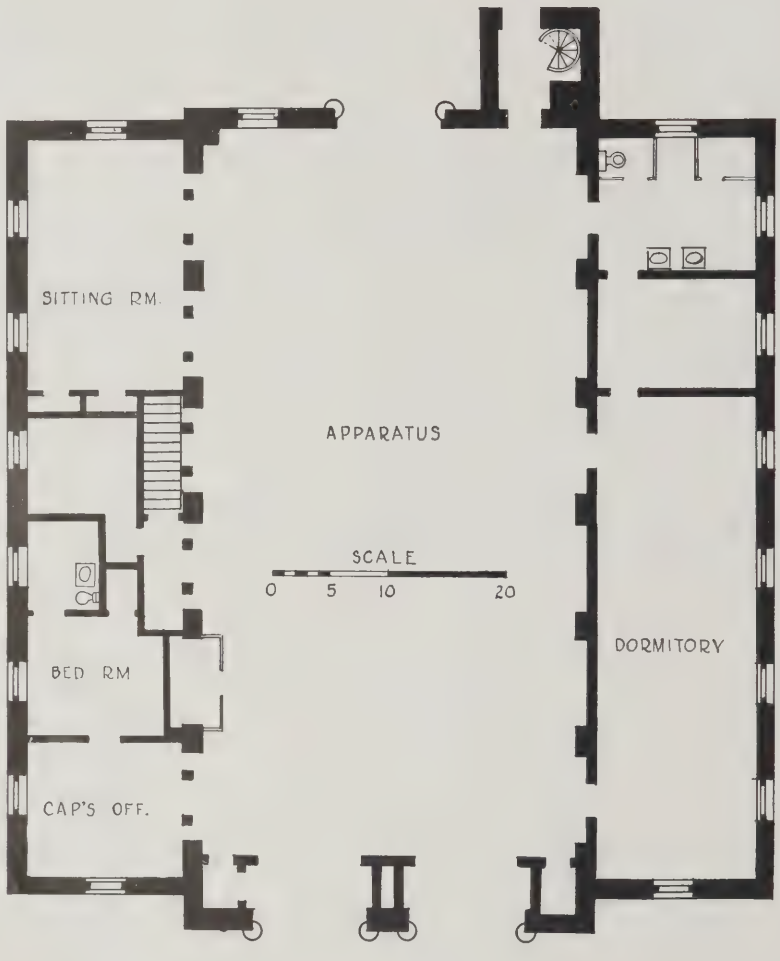


Photos. P. H. B. Wallace

Plans on Back

BYBERRY FIRE HOUSE, PHILADELPHIA

RANKIN, KELLOGG & CRANE, ARCHITECTS



PLANS, FIRST FLOOR, BYBERRY FIRE HOUSE, PHILADELPHIA

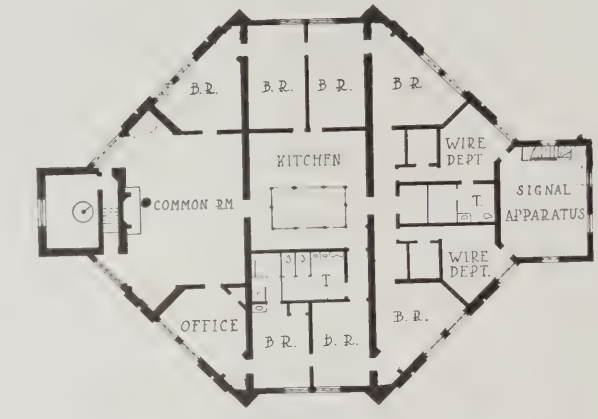
RANKIN, KELLOGG & CRANE, ARCHITECTS



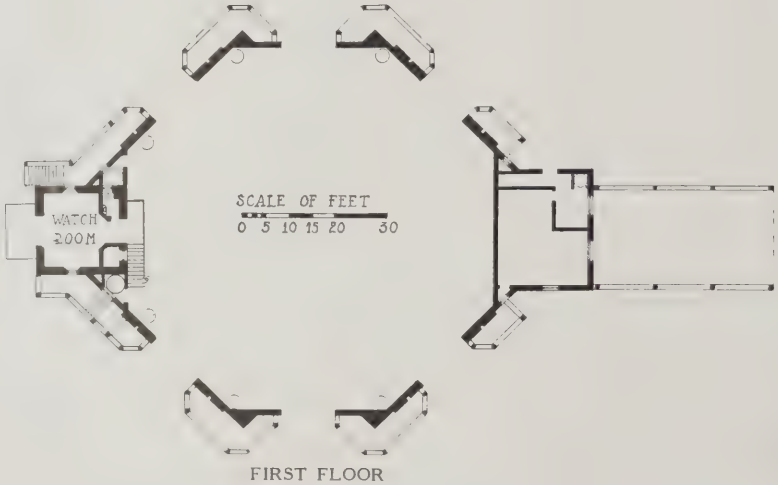
Plans on Back

FIRE STATION, ARLINGTON, MASS.

Photo, Paul J. Weber



SECOND FLOOR



FIRST FLOOR

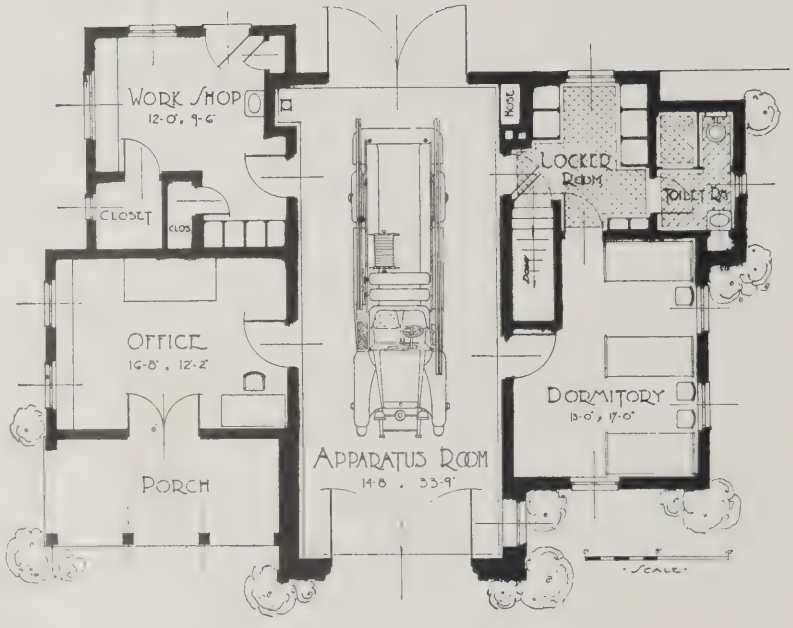
PLANS, FIRE STATION, ARLINGTON, MASS.



Plans on Back

FIRE STATION, MARIEMONT, O.
CHARLES F. CELLARIUS, ARCHITECT

Photo, Mattie Edwards Hewitt



PLANS, FIRE STATION, MARIEMONT, O.

CHARLES F. CELLARIUS, ARCHITECT

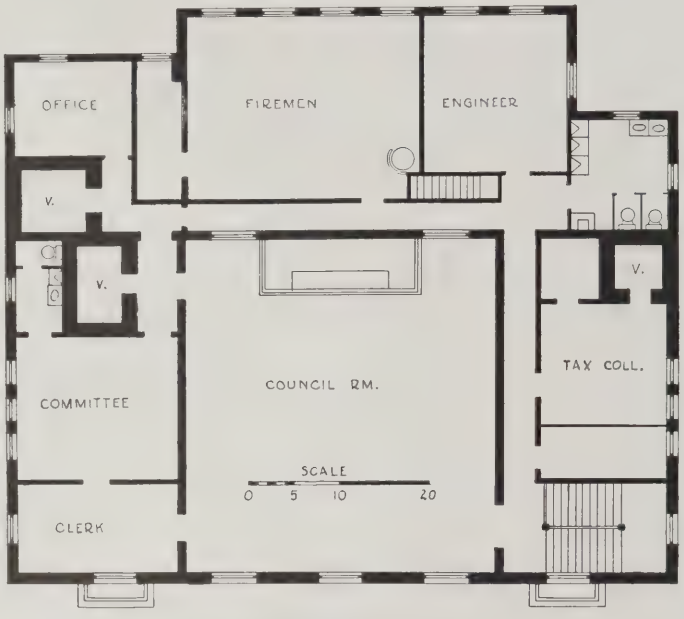


Photo. George H. Van Anda

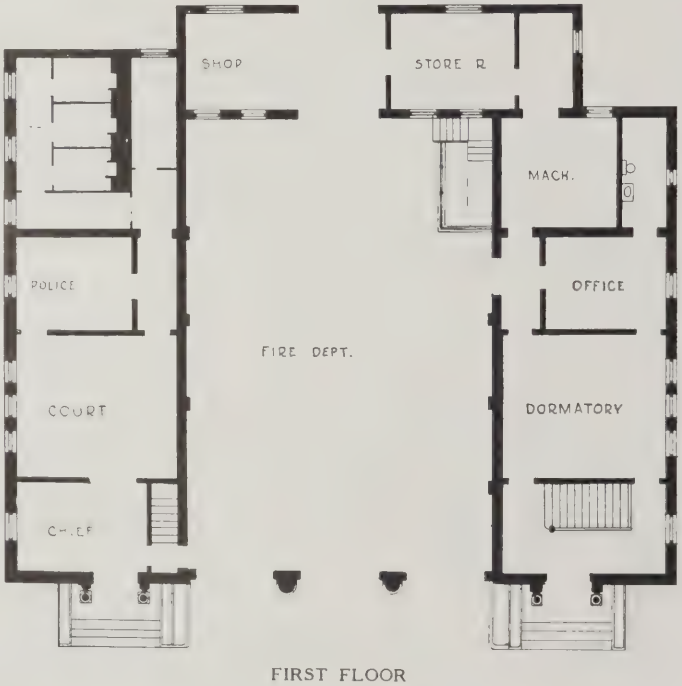
Plans on Back

FIRE STATION AND POLICE HEADQUARTERS, MILBURN, N. J.

HORATIO W. OLCOTT, ARCHITECT



SECOND FLOOR

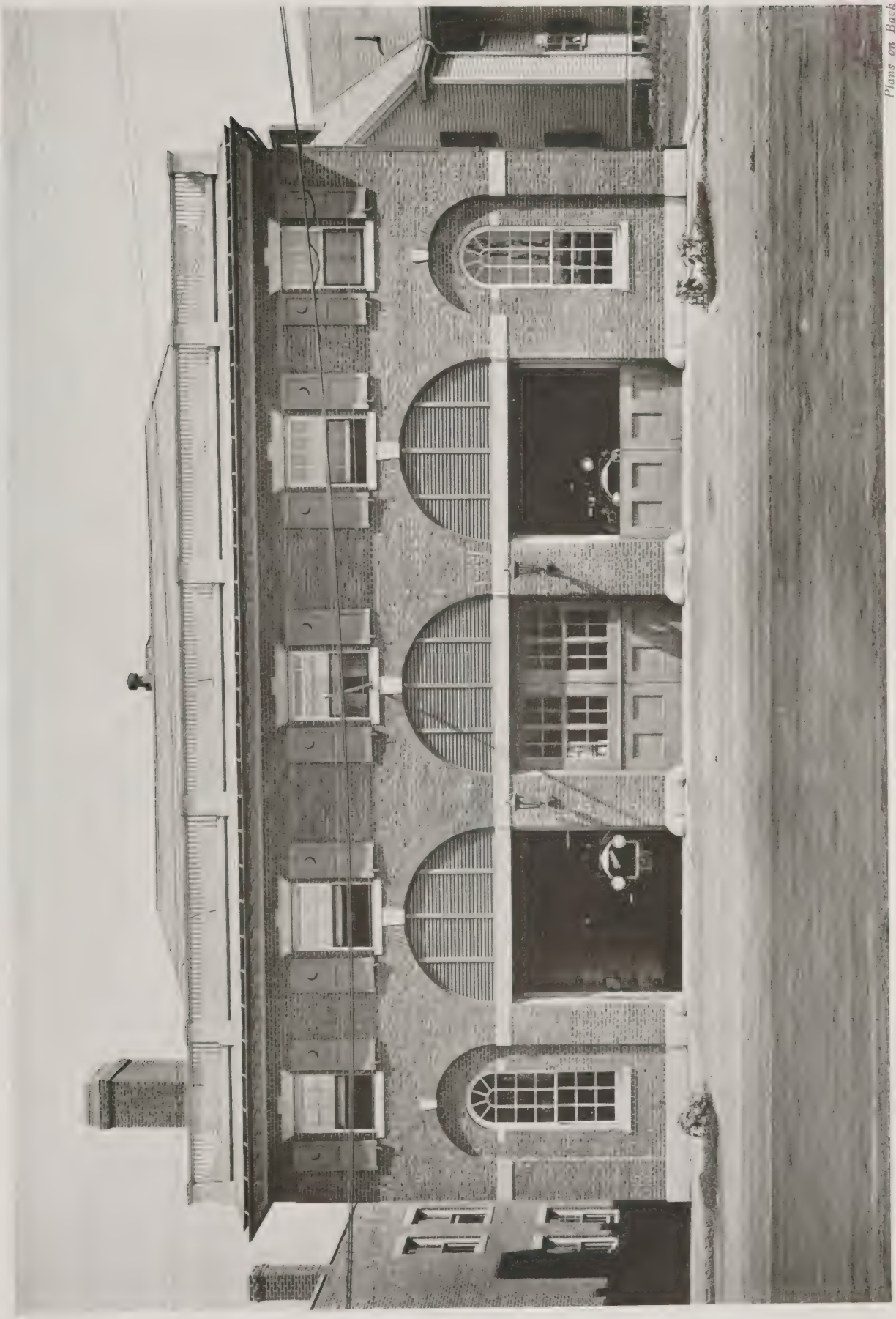


FIRST FLOOR

PLANS, FIRE STATION AND POLICE HEADQUARTERS, MILBURN, N. J.

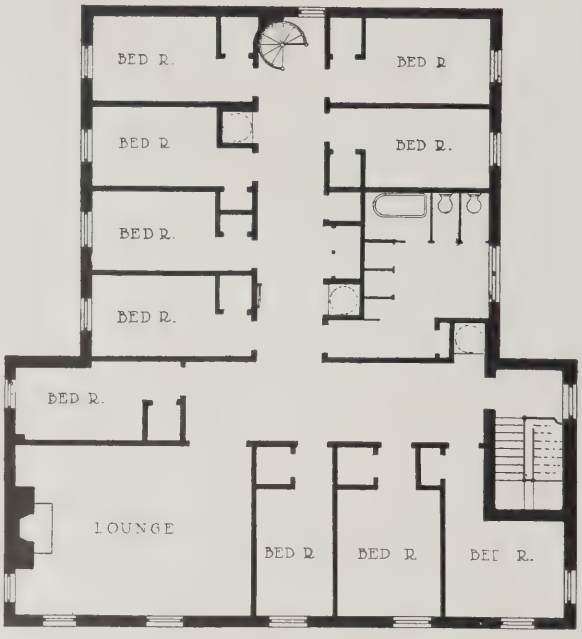
HORATIO W. OLCOTT, ARCHITECT

Plans on Back

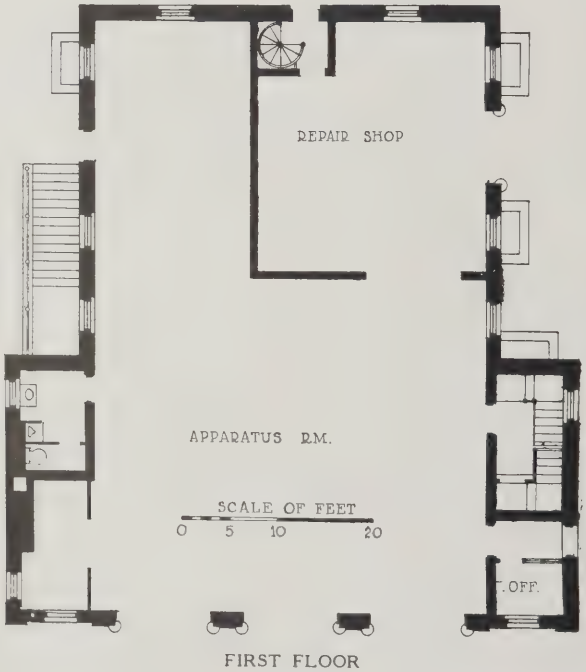


FIRE STATION, SALEM, MASS.

KILHAM, HOPKINS & GREELEY, AND P. H. SMITH, ARCHITECTS



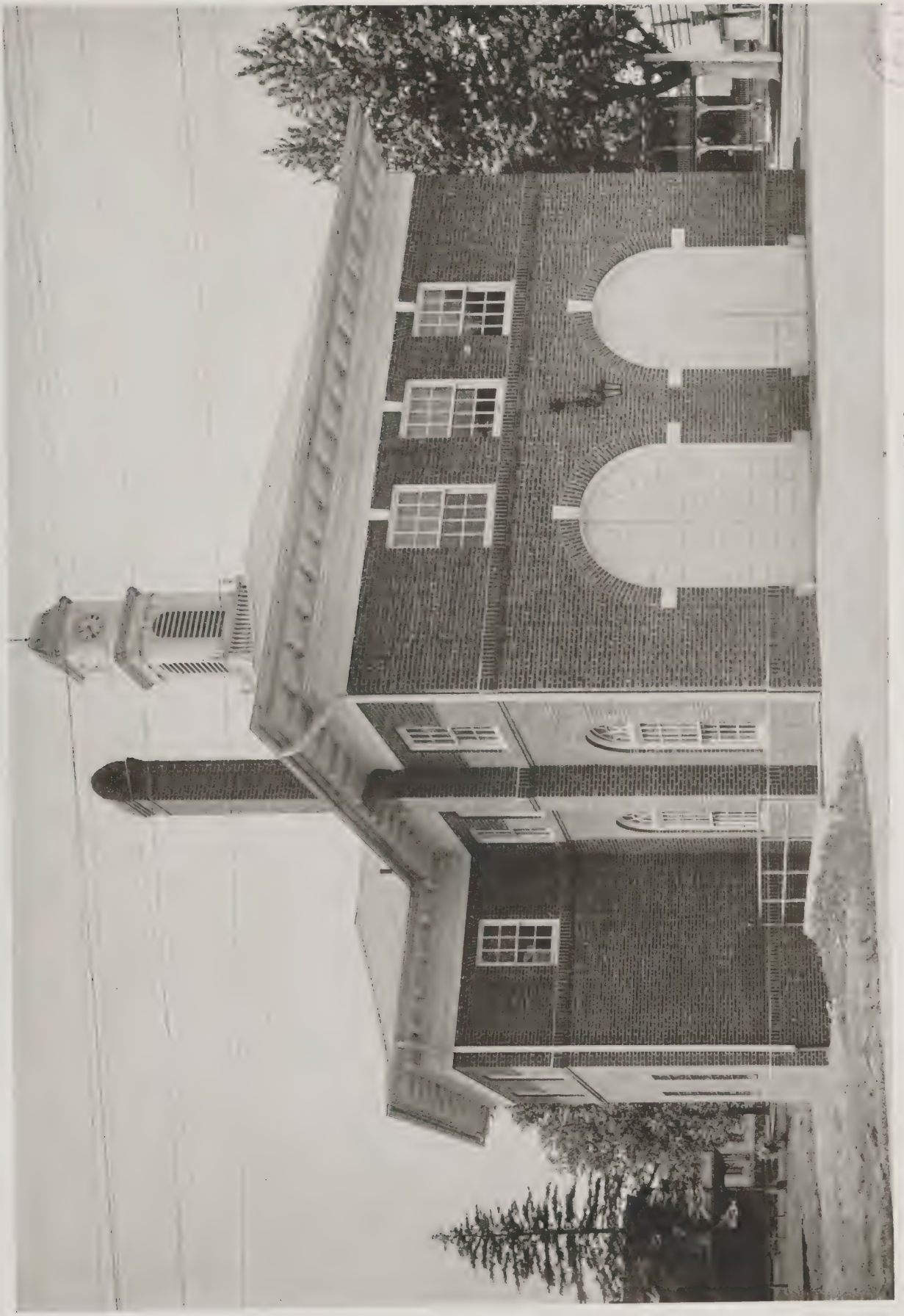
SECOND FLOOR



FIRST FLOOR

PLANS, FIRE STATION, SALEM, MASS.

KILHAM, HOPKINS & GREELEY, AND P. H. SMITH, ARCHITECTS



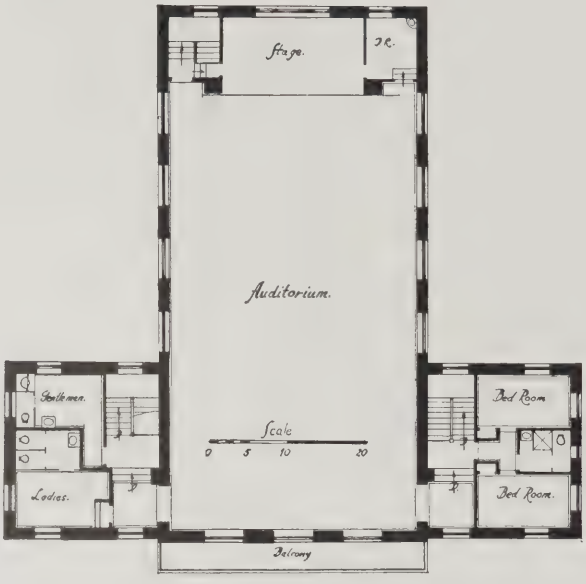
TOWN HALL AND FIRE STATION, SWEDESBORO, N. J.
SIMON & BASSETT, ARCHITECTS



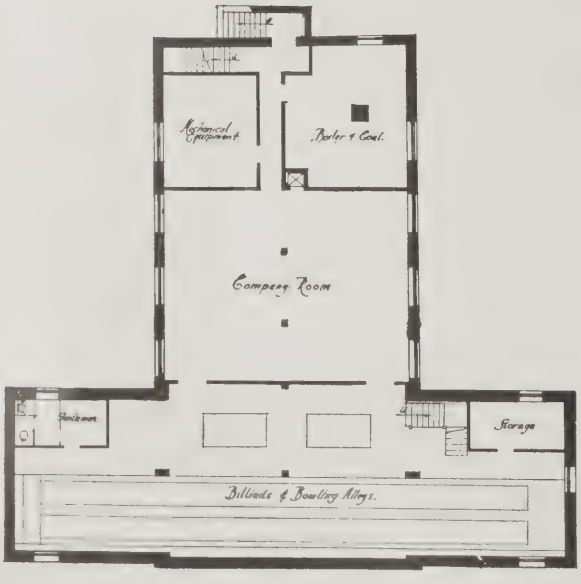
Photo. George H. Van Anda

Plans on Back

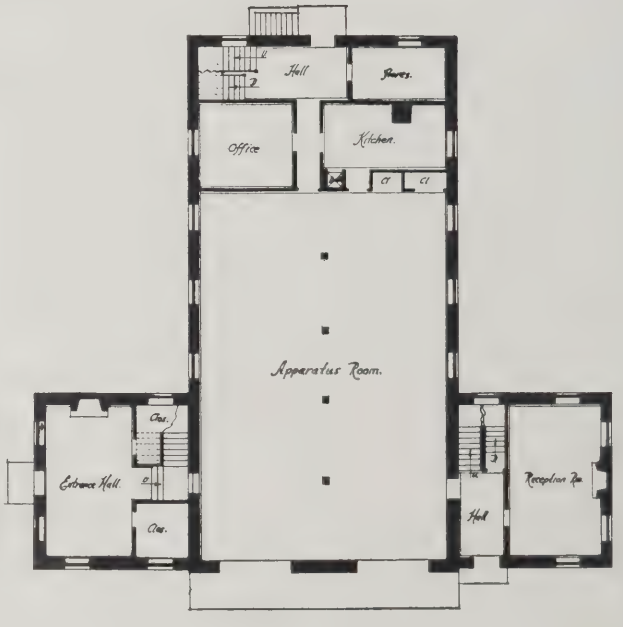
FIRE HOUSE AND AUDITORIUM, LARCHMONT, N. Y.
CHARLES F. MINK, ARCHITECT; OTTO R. EGGERS, ASSOCIATED



SECOND FLOOR



BASEMENT



FIRST FLOOR

PLANS, FIRE HOUSE AND AUDITORIUM, LARCHMONT, N. Y.

CHARLES F. MINK, ARCHITECT; OTTO R. EGGERS, ASSOCIATED

Fire Alarm Headquarters, Boston

O'CONNELL & SHAW, Architects

DEVELOPMENT of the fire alarm system of a city naturally keeps pace with the growth of the entire fire department. In the development of a community from a town into a city and from a small city into a large municipality there are involved all the changes which are wrought when a small fire department grows into a highly organized and intricate system. In any enlightened modern community these changes are likely to be accompanied by expressions of constantly improving architectural taste as the primitive structures which serve one period of the city's growth give way to buildings more expressive of the municipal dignity.

The new fire alarm building for the city of Boston is a conspicuous example of the growing tendency of cities to install fire alarm equipment in buildings which are not only practical for the operation of such systems but which are also distinct architectural additions to their surroundings. In most cities fire alarm systems during many years were installed in obscure corners of city buildings, usually in the fire headquarters. Experience over a number of years showed that many of them were in buildings which were by no means fireproof. Once or twice every year a fire would break out in such a building, absolutely destroying fire alarm headquarters and leaving the fire department and the citizens wholly without fire alarm protection. The engineers of the National Board of Fire Underwriters began a number of years ago to insist that such systems be installed in isolated, fire-resistive buildings. These buildings in the beginning were unimpressive, but



View from Entrance to Fenway



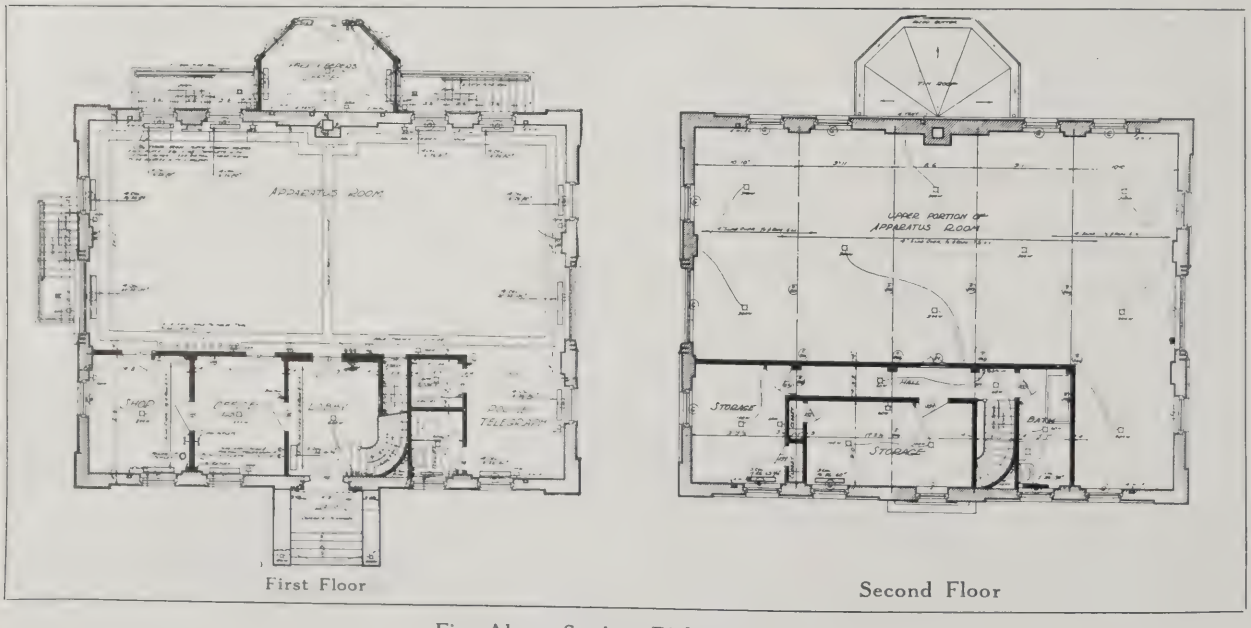
Main Apparatus Room, Fire Alarm Headquarters, Boston
O'Connell & Shaw, Architects



General View of Exterior

slowly city officials began to realize that the importance of the service and the usual locations of the offices made it imperative that the design and appearance of such buildings be founded on sound architectural principles. This is now being generally done.

A number of cities have located such buildings in parks, since such sites supplied proper isolation and frequently offered the only appropriate sites near the centers of cable distribution. Providence, Richmond, Stockton, Cal., and Boston have all erected buildings which in their architecture and equipment marked a conspicuous advance over



First Floor

Second Floor

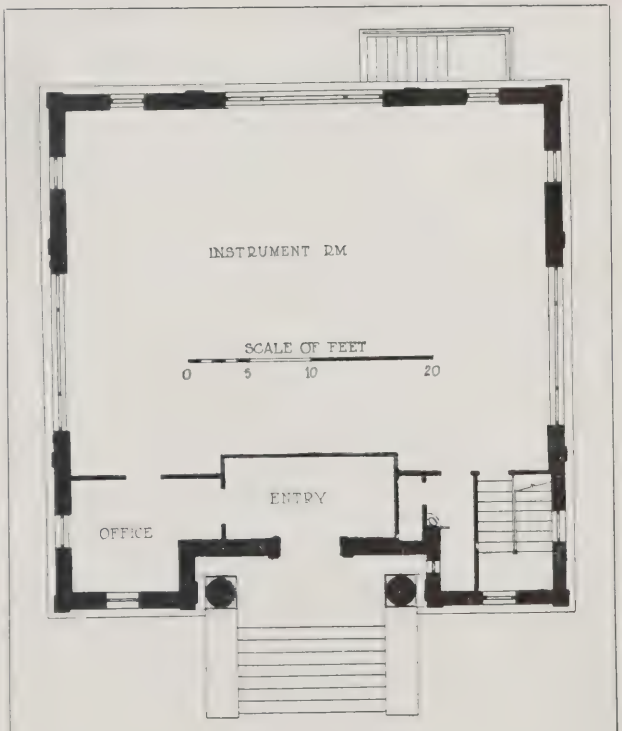
Fire Alarm Station, Richmond, Va.
Carneal & Johnson, Architects



A General View

earlier buildings. The architects of the new structure in Boston were faced with external conditions unusual in most such projects. Permission had been obtained from the state legislature to erect the building on land belonging to the Metropolitan Park System, subject to approval of the type of building by the park commissioners. Opposite the site selected, at one of the chief entrances to the Fenway, were a memorial gate and a circular plot of land where it was planned eventually to install a statue. It was necessary, therefore, that the new building not only be of a type that would agree in character with the surrounding district but also that it furnish a suitable background for any future statuary. The entrances to the building were, therefore, placed at either end, permitting the front of the structure to be unbroken by an entrance. The structure itself is in architectural agreement with its distinguished surroundings, use having been made of a modified Classic style developed in limestone. Separate offices are provided for the fire commissioner, the superintendent of fire alarms and his assistant. Rooms are provided for training new firemen to be telegraphers, as all Boston firemen must be familiar with the Morse code of telegraphy.

The central office fire alarm apparatus in a city as large as Boston is of course as complete as that of any power station or telephone office. When a



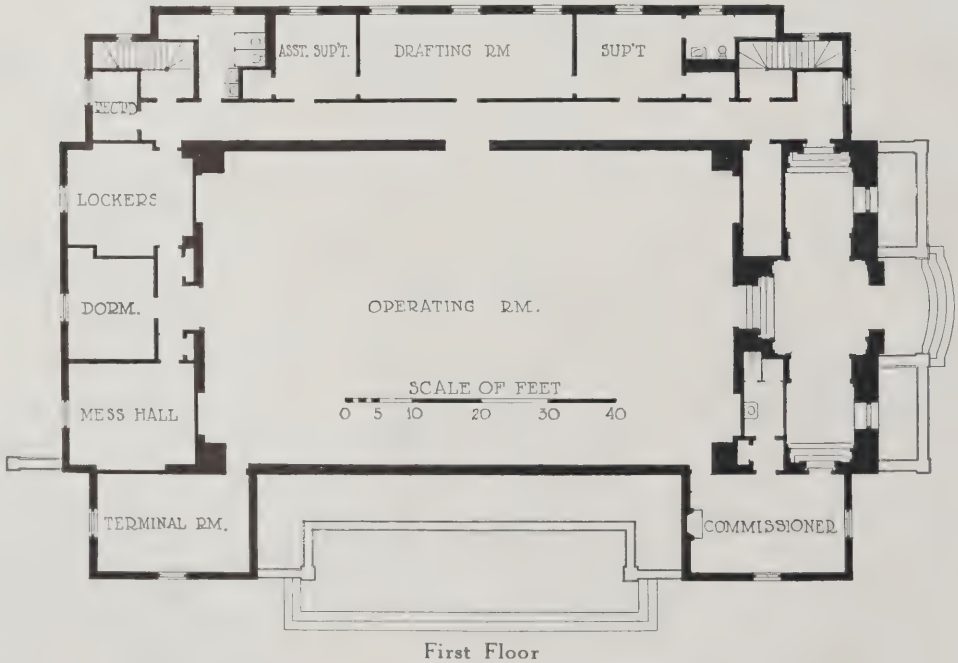
First Floor

Fire Alarm Office, Stockton, Cal.
Mayo, Cowell, Bissell & Co., Architects

fire alarm box is operated on a street corner for a fire, the signal is received on a relay board which flashes a light and sounds a bell. The signal is permanently recorded on a paper tape in the register, and the time of the receipt of the alarm is stamped by an automatic time stamp. In smaller cities these signals are automatically re-transmitted to the apparatus houses, but in a large city, where there is a danger of alarms for simultaneous fires, and where all fire companies do not answer all alarms, the underwriters require a manual office where the alarms are set up on large transmitters and sent to the proper engine houses. All telephone alarms of fires are received at the telephone switchboard and sent out over the same transmitters. Duplicate circuits are provided from the central office to the apparatus houses throughout the city. The boards to which these are connected are also provided with means for telegraphing to the various stations. Storage battery switchboards are provided for charging the batteries which provide the electrical energy for the system. These storage battery boards are mounted back to back with the box line relay boards to conserve space. A protector board at the end of the room is equipped with fuses, lightning arresters and similar devices to protect the central station apparatus from lightning and foreign currents. Radio transmitting and receiving sets are provided to enable fire alarm headquarters to keep in constant touch with the fire boats, though they may be absent.

There are at present in service some 1425 fire alarm boxes connected to 76 box circuits, 18 tapper circuits and 16 gong circuits. Three signal circuits are connected with the high-pressure pumping system. The present equipment has a capacity of 2000 boxes, and sufficient space has been provided to care for 5000 boxes ultimately, when necessary.

The switchboards, transmitters, registers, relay, gong and joker boards together with telephone boxes and radio equipment made it necessary that a fairly large room be provided, especially as space was necessary for future extensions. The acoustic properties of the room became, therefore, an important matter, as a confusion of directions might lead to an incorrect alarm. The entire ceiling and walls of the room have been covered with a special board which absorbs the sounds and eliminates echoes. The electrical energy for operating the fire alarm circuits is provided by some 6000 cells of battery which occupy a separate room in the basement. These individual cells are mounted on porcelain and glass strips on metal battery racks arranged to be easily inspected and readily cleaned and filled. The basement floor was treated with a waterproofing compound. Metal battery racks are bolted directly to the floor. To eliminate possible seepage, these racks are mounted on blocks which are an integral part of the floor. A gasolene-driven generator is provided in the basement to furnish electrical current when desired. All of the fire alarm circuits are brought to a terminal rack on the first floor and then distributed to the various boards and instruments. Approximately 50 miles of wire was used inside of the building to make all the necessary connections.



First Floor

Plan, Fire Alarm Headquarters, Boston
O'Connell & Shaw, Architects

Heating and Ventilating Public Buildings

By ALFRED J. OFFNER, M. E.

Of Offner & McKnight, Consulting Engineers

THE designing for public buildings of their extremely important heating and ventilating systems, of the plumbing and electrical work should wherever possible be done under the direction of competent engineers specializing in such work. As well as the architect, the engineer should be a master of his profession and fearless in carrying out the work in the best interests of the public he is serving. The materials and apparatus used should be of proper design, of best workmanship, and suitable for their purposes. All unnecessary apparatus and material should be eliminated, and the system should be designed so as to give the best results in the simplest way. The result will be a plant not only straightforward in design and reasonable in first cost, but also a plant low in cost of maintenance and economical in operation. Should the architect's fee be so small that he cannot obtain engineering services, the community should contract for such work directly. It will more than pay in the results obtained. The builder entrusted with the erection of the building, and the contractors installing the various parts of the mechanical equipment should all be financially sound and masters of their respective trades. The work should not be awarded as payment for favors extended to the party in power. With capable architects and engineers planning and supervising the work and skilled workmen installing it, the resulting building can only be a source of pride to the community. The heating and ventilating of public buildings should be designed to obtain the best results. Machinery of every description and all concealed apparatus which requires attention from time to time as to adjusting, possible repairs and cleaning should be easily accessible. The system should be designed to properly fit the available spaces and should be in agreement with the architecture of the building. Care on the part of the engineer together with the cooperation of the architect will result in the visible parts of equipment harmonizing with the building.

Shall Current be Generated in the Building?

Whether the mechanical equipment of public buildings should include power plants for the generation of electric current depends not only on the sizes of the structures but also on local conditions. In small public buildings, the isolated power plant cannot compete with the central electric plant, and it is very questionable whether it can in large buildings. Against the cost of electric current bought from outside sources there must be considered the first cost of such a plant, the interest and depreciation on this additional investment, the maintenance charges of such an installation, the cost of fuel and water, and the cost of additional skilled labor. Of course, with a generating plant, the exhaust steam from the engines can be used to heat the building during the winter at no additional cost. In the summer this available heat is generally wasted, for the amount that can be used for heating water for the plumbing system is but a small percentage of the total load. A generating plant requires considerable area. As a rule, much storage space is required in public buildings, and therefore any area in the basement of such a structure can always be used advantageously.

Shall Heat Be Bought from Outside?

In localities having community central plants selling energy in the form of steam or hot water for heating buildings, the question often arises as to whether the heat should be bought or should be generated in the building. The decision in favor of one as against the other alternative is not so well defined as in the case of the electrical plant. As with the isolated power plant, the question is answered in the relative costs of the two. In the event that heat is bought from outside sources, spaces should be provided in the building for a possible boiler plant, for fuel storage, and for a chimney. This is a paying protection to the owners in case of failure on the part of the central plant, and it is also insurance against the rates' being excessive. The heat in the condensation as returned from the heating system and other equipment, whether returned to the central plant or not, should always be conserved. It is generally used in partly heating water for the plumbing system. In many localities there are laws requiring that the condensate be cooled before it is wasted, to prevent damaging the sewers, which must be avoided.

Types of Heating Systems

A building may be heated by the use of one or (in combination) of three media,—air, water, or steam. The heat, using any one of these media, can be circulated without the use of any moving apparatus, the results being obtained by natural means (gravity), and it can also be circulated by mechanical means.

Heating by Air. Heating very small public buildings by warm air with gravity circulation, i. e. warm air furnaces, is rarely done. While this method of heating is the cheapest to install, it is also the most expensive to operate, especially if the air is taken from outdoors. If the air is recirculated, in order to reduce the cost of fuel, the main advantage, outside of initial cost, claimed for this type of heating, namely, use of fresh air, is defeated. The operation of this type of heating is not as positive as with either steam or water, as wind pressures are likely to affect the proper air circulation and distribution of the heat. The heating of certain public buildings, such as railroad stations having very large rooms, is most successfully and generally best done by warm air

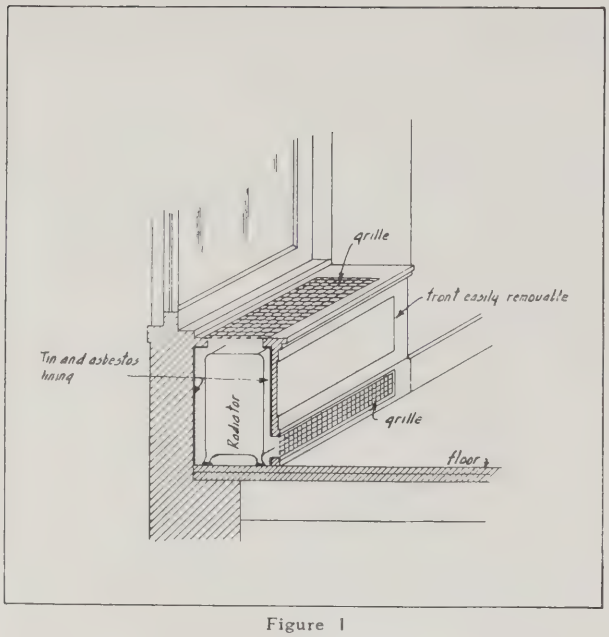


Figure 1

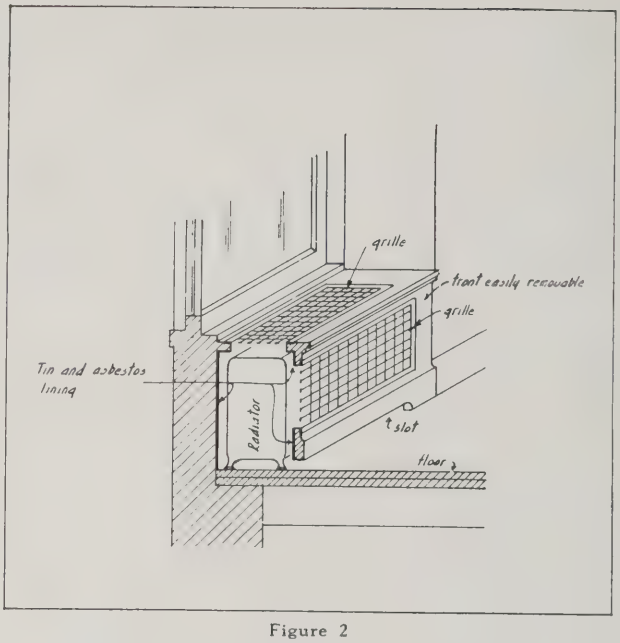


Figure 2

Methods of Concealing Radiators Under Window Sills

forced in by fans. The heat distribution of such a system is positive. It permits quick reheating, especially if arrangements are made for recirculating the air. The temperature of the air should be under automatic control, keeping the rooms at an even temperature, and the amount of air supplied should be controlled by the proper manipulation of dampers.

Water Heating. While heating of public buildings by hot water can be done successfully, there are certain disadvantages that must be considered before this type of heating is decided upon. For buildings which during the night, over week ends, and on holidays are only partly heated, if heated at all, the hot water heating system, especially if of the gravity type, has the disadvantage of being not responsive to quick reheating. It is also not so responsive to sudden changes in the outside temperatures. There is also the possibility of its freezing, during the periods of reduced heating, caused by careless operation. One advantage of heating by water, is its central temperature regulation. The temperature of the building can be kept fairly uniform by regulating the water temperature at the boiler according to weather conditions, making the water warmer as the weather becomes colder, and cooler as the weather becomes warmer. In small buildings, the gravity system can be used, but in larger buildings, especially if they are long and low, pumps must be used to circulate the water. Hot water heating cannot be used for high buildings, due to excessive pressure, unless the heating system is divided into zones.

Heating by Steam. Steam is generally selected for public buildings. It is most suited for this kind of structure, being flexible in operation, permitting quick heating up and cooling, and being adapted to all sizes and heights of buildings. For smaller structures the so-called one-pipe system can be used to advantage. It is simple to install and operate and is reasonable in first cost. For larger and better public buildings, the vapor or modulation types of steam heating, operating under very low steam pressures, are recommended. With modulation steam control valves on the radiators and with constant low steam pressures, the amount of steam supplied to each radiator can be controlled to suit the occupants. This type of heating eliminates the use of automatic air valves on the radiators. The traps used on the return ends of the radiators should be of the thermostatic type and positive in their operation. For very large buildings the vacuum system of steam heating is often used. In this system the air and condensation from the radiators are removed by means of a vacuum pump, generally operated by an electric motor.

Temperatures and Radiation

Heating systems are designed to heat the various rooms of a building to certain temperatures with a minimum low outside temperature prevailing at the locality of the building. Table No. 1 (given on page 616) gives the temperatures generally maintained.

The radiators required to heat the various rooms are preferably placed under windows. In this location they are most efficient, look the best, and are the most out of the way. In more important rooms and in rooms where a certain dignity is desired, radiators are often concealed by being enclosed in wood or metal, harmonizing with the finish of the room. Enclosing radiators in such a fashion reduces their heating efficiency, and they must, therefore, be made larger than would be necessary if they were exposed. The amount of increase in size depends upon the type of enclosure and the area of openings provided. Concealed radiators are generally made 33⅓ per cent larger than exposed radiators. Proper openings should be provided in the radiator enclosures for the circulation of air. The inlet opening should be

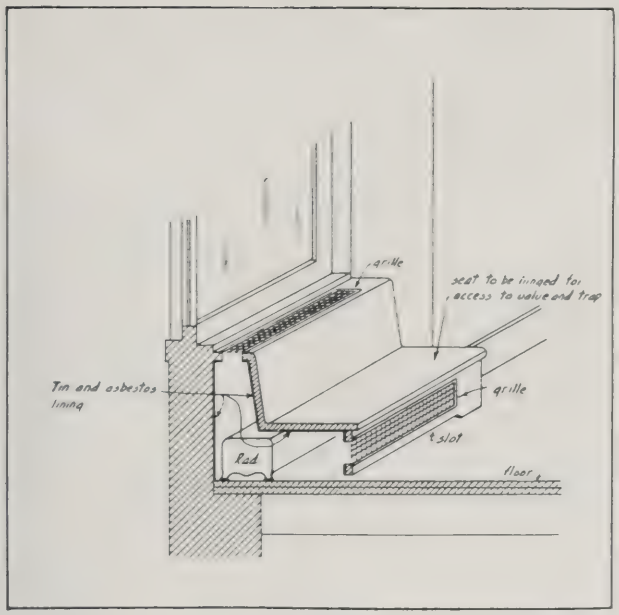


Figure 3
Concealing Radiator Under Seat

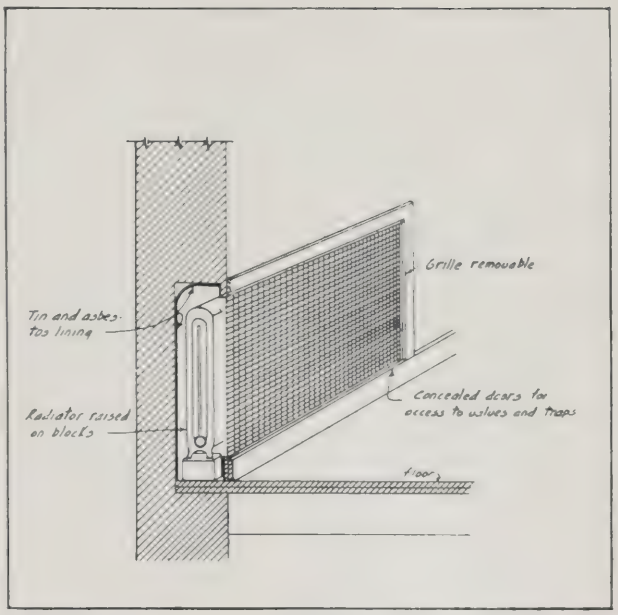


Figure 4
Concealing Radiator in Wall

located on the front of the enclosure, always below the lowest portion of the radiator. If it is impossible to place the inlet at the floor level, the radiator should then he raised. The outlet grille should be at the top of the radiator, either on the face of the enclosure or, if the radiator is located under a window, preferably in the sill, an arrangement often used.

Radiator enclosures should be lined with galvanized iron and asbestos to protect the woodwork against the action of the heat. They should be so arranged as to give easy access to the radiators and valves in case of necessary repairs and for cleaning purposes. Control valves should have extension stems to bring the wheels or handles outside of the enclosures for easy operating, or the grilles should have concealed doors for access to the valves. Where radiators are concealed under seats, the seats are sometimes hinged to permit access to the valves. There are various methods of concealing radiators. Figures 1 and 2 show typical arrangements where radiators are located under windows. Figure 3 shows an arrangement for concealing radiators under seats. Radiators concealed in walls may have grilles covering the entire fronts of the radiators as illustrated by Figure 4, or there may be a grille near the floor and another near the ceiling as shown by Figure 5. In rooms where special sanitary precautions are desired, such as infirmaries or rooms where water is likely to be spilled on the floor, as in toilets, bathrooms, etc., radiators should be hung on walls and the pipe connections to them be brought through the walls above the floors. This will give a clean sweep under the radiators. The pipe connections should come either through the baseboard or above it, so that the wall plates will lie flat and not project over one or the other. Figure 6 shows a typical arrangement for hanging radiators, often used because of its convenience and its great practicability.

The Importance of Selecting Boilers

The type of heating boiler to be used in a public building depends on the size of the structure and the space available. For smaller buildings, cast iron boilers of the sectional type are often used. This type of boiler can easily be added to, should the structure be made larger. For most of the larger buildings, steel boilers of the tubular type should be used.

Concerning Choice of Fuels for Heating

Whether to use wood, coal, oil, or gas as the fuel in heating a public building depends upon what is available, its cost, and the possibility of obtaining it easily. Where bituminous coal must be used, precautions must be taken to reduce the amount of smoke to a minimum. In this respect public buildings should set a good example to the rest of the community. In smaller public buildings, if oil is the fuel to be used, burners which can be easily and properly serviced and that will burn the heaviest oil that does not require preheating should be selected. This will permit the use of the cheaper grades of oil. In larger buildings, burners burning the heavy oils which require preheating can be used. This will permit the burning of the cheapest fuel oil available. While gas is the ideal fuel, especially for small buildings, its cost of operation in nearly every case prevents its general use,—almost always, in fact.

Heat Regulation and Its Advantages

All important rooms, all rooms occupied by large clerical and working forces, and all rooms subject to crowded attendance should have their heating under automatic control. This will not only keep the rooms at even temperatures, preventing over- and underheating, but will also save fuel. Installing automatic heat regulation, under these conditions, is advisable.

Ventilation and Its Importance

The question whether certain rooms in public buildings should be mechanically ventilated depends upon the importance of the building and the amount of money available. In most of the states the ventilation of school houses is compulsory. In other public buildings, likely to accommodate crowds or large working forces, all interior rooms having no means of natural ventilation, and all rooms where odors or excessive heat are produced, should be ventilated. While it is possible to both heat and ventilate a room by the duct system directly, except for certain special cases it is best to separate the two systems, having each system independent of the other.

Air for Ventilation Should Be Cleaned. Public buildings are invariably located in the busiest parts of a community, on streets that are dirty and dusty. The air under such conditions must be filtered and cleaned before it is used. This can be done by filtering the air through semi-dry cell filters, the filtering medium being either split wire or metal baffle plates dipped in an adhesive liquid. The air can also actually be washed by passing it through sprays of water as is the method much used in air washers.

Arrangement of Ventilating Systems. In large buildings the ventilating systems are arranged in units, each unit taking care of certain parts of the building most likely to be used at the same time. This arrangement makes the ventilating systems flexible and economical in operation. In the winter, the air before being delivered to the various rooms must be tempered to prevent drafts and cooling.

Unit Ventilating Systems. For the air supply to individual rooms or to rooms far apart, the unit ventilating systems can readily be used. The entire air supply ventilating unit consisting of air intake, heating element, and fan and motor, is contained in one enclosure and is placed in the room ventilated.

Amount of Ventilation. The amount of ventilation to be provided for each room depends upon the purpose for which the room is to be used, its size and its location. In cases where it is fixed by law, the amount of ventilation required for school rooms is generally 30 cubic feet of air per minute per pupil. For other rooms the amount of ventilation can be determined from Table No. 2, which is given here.

Cooling of Public Buildings

The most important problem in producing comfortable conditions during the hot and humid summer months has to do with the dehumidifying of the air. This requires special equipment. Cooling of large rooms, during the warm period of the year, so successfully applied in theaters and certain industrial structures, has been applied also to important rooms.

Table No. 1; Temperatures, Degrees Fahr.

Public rooms	68 to 70
Corridors, halls, etc.	65 to 70
Offices	70
Public toilets	65
Private "	70
Swimming pools	70
Auditoriums	65 to 70
School rooms	68 to 70
Gymnasiums	60 to 65
Hospitals	70 to 75
Operating rooms	75 to 80
Court rooms	70
Prisons	65
Workshops	60 to 65

Table No. 2; Ventilation Requirements

	Cu. ft. per min. per occupant	Air changes per hour
Offices	—	3 to 6
Toilets	—	10 to 20
Auditoriums	15 to 20	—
School rooms	30 or by law	—
Hospitals	30 to 75	—
Court rooms	—	6 to 8
Prisons	10 to 20	—
Public waiting rooms	—	3 to 5
Libraries	—	3 to 4

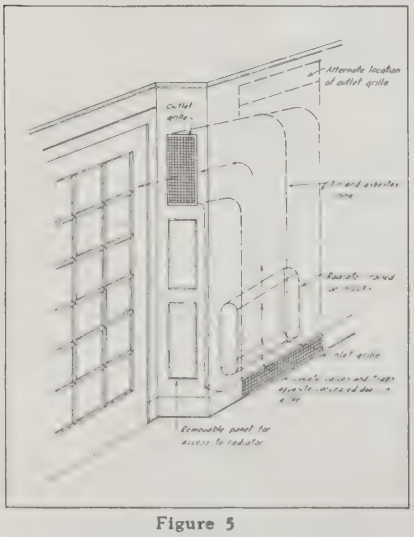


Figure 5
Concealing Radiator in Wall

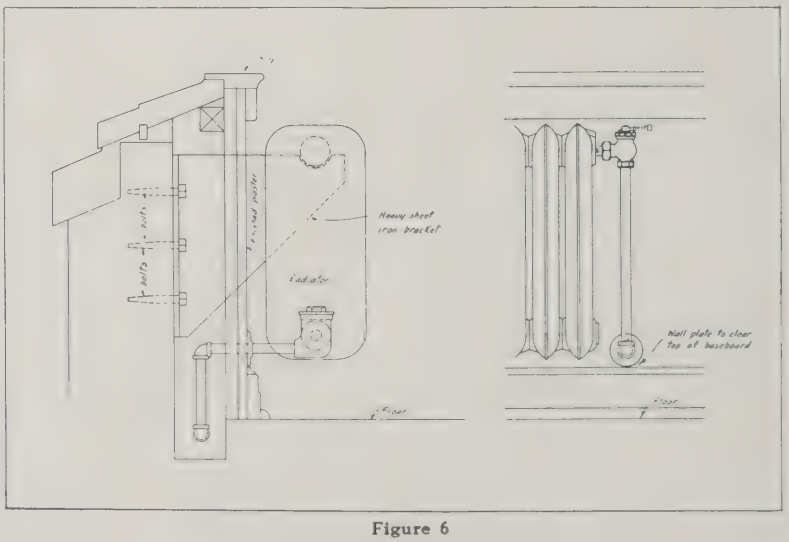


Figure 6
Method of Hanging Radiator Upon Wall

FOR COMPLETION IN 1927

It is *Conscientious Purpose* which turns *Work* into *Art*


885 PARK AVENUE


125 EAST 84th ST

A GROWING demand for finer commercial and residential structures is setting an exacting standard for builders, with the result that greater attention is being given to architectural treatments, quality of construction and conveniences.

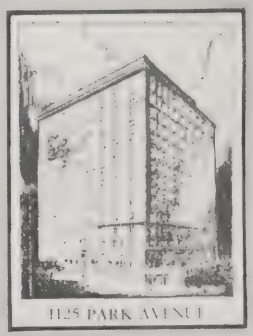
Paralleling the gigantic progress of the building industry is the developed appreciation of the public for the beautiful

Building construction is fast combining industrial science with art. But buildings reflecting finished craftsmanship are the result only of long experience and conscientious purpose.

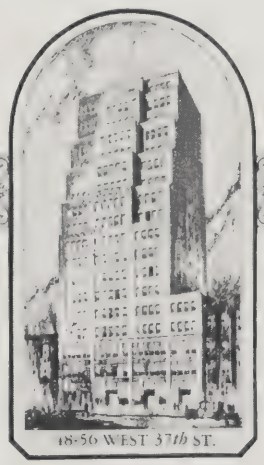
More than a quarter century ago, Julius Tishman & Sons, Inc., launched their first constructional enterprise, resolving then, in 1898, to make "Conscientious Purpose" the cornerstone of each new structure. For nearly thirty years they have endeavored in the construction of many business buildings and apartment homes to master the science and art of planning, building and property management.

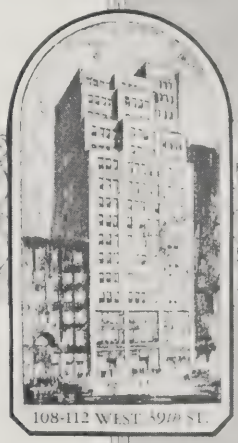
Seven new structures, three commercial and four Park Avenue apartments, will reach completion in 1927


888 PARK AVENUE


1125 PARK AVENUE


59-63 WEST 37th ST.


48-56 WEST 37th ST.


108-112 WEST 39th ST.

JULIUS TISHMAN & SONS
INCORPORATED
Owners and Builders
285 MADISON AVENUE
NEW YORK

More proof that Illinois Vapor Systems enjoy a remarkable record for repeat orders among discriminating owners and builders.

Write for "Vapor Details" Bulletin 22 (AIA 30c2)

This facsimile of a page from the New York Herald-Tribune shows a group of notable buildings, all equipped with Illinois Vapor Systems.

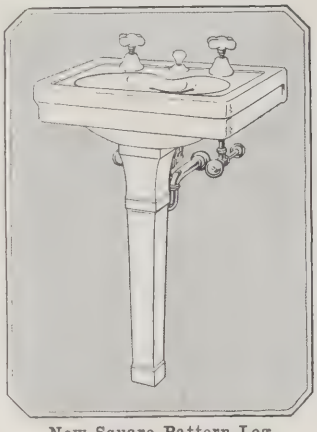
ILLINOIS ENGINEERING COMPANY

ROBT. L. GIFFORD. PRES. INCORPORATED 1900

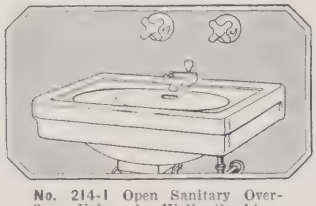
BRANCHES AND REPRESENTATIVES IN 40 CITIES

CHICAGO

A page of Fine Lavatories especially appropriate for Hotels and Apartment Houses



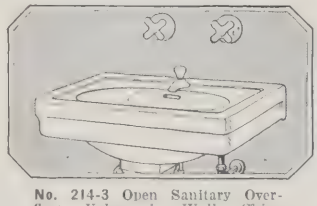
New Square Pattern Leg
No. 214 Maywood Hooded Overflow, Combination Supply with Eljer concealed nozzle and pop up waste.



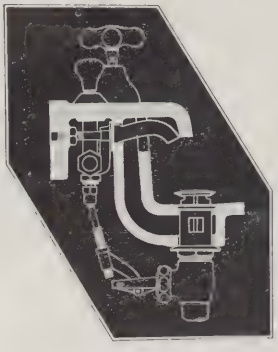
No. 214-1 Open Sanitary Overflow, Valves in Wall, Combination soap dish and spout with pop up waste.



No. 214-2 Hooded Overflow, Valves in Wall, Eljer concealed brass spout and pop up waste.



No. 214-3 Open Sanitary Overflow, Valves in Wall, China nozzle and pop up waste.



Patented

Eljer Concealed Nozzle. Note the brass nozzle concealed beneath the hood. A complete guarantee against a slab crack when the water comes gushing through, hot—cold—hot—cold. The water doesn't touch the slab at all.

IN a size (17″ x 22″) particularly adapted for Hotels and Apartments.

The 17″ x 22″ size is typically a Hotel lavatory. It has a bowl approximately that of the usual 20″ x 24″ size and gives every utility advantage of that size.

Practically a 24″ lavatory condensed into a 22″ size.

In addition to the saving in floor space there is a substantial saving in the cost of the fixture itself.

Other sizes as follows:

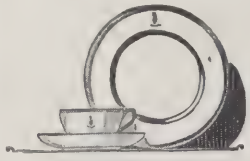
Maywood..18″ x 20″	**Maywood..22″ x 27″**
Maywood..20″ x 24″	**Statler....20″ x 24″**

Both lavatories can be furnished to set free or to tile into the wall.

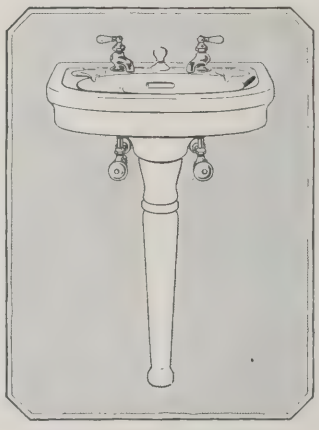
They are made for use with a wide variety of fittings,—note the several styles shown here.

Note especially the new square leg of the Maywood. This lends a distinction not found with any of the regular pattern legs furnished heretofore.

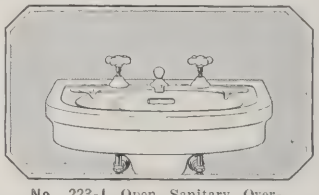
Eljer quick shipping service helps to speed up your work and smooth away rush jobs frowns. Try it with either or both of these lavatories. Eljer Company, Ford City, Pa. Plants at Ford City, Pa., and Cameron, W. Va.



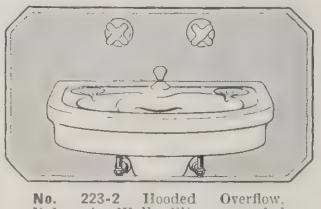
Plumbing fixtures of Eljer China are similar in texture to the finest French Table China—but with the added toughness necessary to withstand rough usage. Acid-proof and rust-proof.



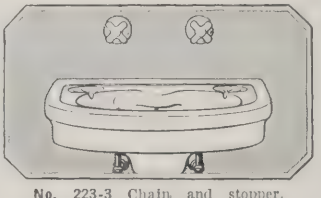
No. 223 Statler Open Sanitary Overflow. Quick compression faucets and pop up waste.



No. 223-1 Open Sanitary Overflow. Combination supply with exposed nozzle and pop up waste.



No. 223-2 Hooded Overflow, Valves in Wall, Eljer concealed brass spout and pop up waste.



No. 223-3 Chain and stopper, Hooded Overflow, Valves in Wall.

ELJER

VITREOUS CHINA PLUMBING FIXTURES

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